Amateur Radio

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

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- ★ NEW COMPETITION
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amateur radio

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NEXT MONTH...

WILLIS ISLAND — A DXer's Paradise

COVER PHOTO

One of the Victorian Police's Kayfa C30s on Port Phillip Bay — see page 6 for details.

Photo: Courtesy Police Life

WIA NEWS

PARLIAMENT DEBATES RADIOCOMMUNICATIONS LICENCE FEES BILL

The debate in the Senate on 27th May reported in Hansard contains a number of interesting statements.

The Minister introducing the second reading of the Bills commented that the intent of the Bills is to allow for radiocommunications licence fees to be determined on a basis other than solely the recovery of the costs administering the radio spectrum. The fees would be set out in regulations made under the new Licence Fee Bill instead of under the W/T Act of 1905.

The Bill also includes a provision to ensure that all Commonwealth and Territory authorities are required to pay fees. The licence fees legislation would apply to the transmission and reception of private and business radiocommunications conducted via two-way radio and microwave links. These fees would not apply (a) to commercial television and radio stations which are licensed under separate legislation and (b) to normal television and broadcasting receivers.

The Bills were supported by all parties. In replying to the debate Senator Peter Baume said it established that the fees were taxes to put them beyond any question of legal challenge and provided for the fees to be phased in.

He also said that a complete review of the W/T Act is approaching completion, having been under way for some time: Fees are to be a separate matter.

The Minister said the principle factors which are taken into account for determining the licence fees were:—

(a) The effective power radiating into the spectrum;

(b) The band width actually occupied by the signal or reserved for the signal if it is not used continuously;

(c) The space over which the signal is effectively radiated and detectable;

(d) The time the spectrum is occupied by the signal, and that may be continuous;

(e) The potential for interference to other users; and

(f) The sensitivity to interference from other users.

He went on to say that it is necessary to divide spectrum users into a number of classes to minimise administrative costs and to facilitate the prescription of licence fees. It was not feasible to prescribe a fee for individual cases, he said. The Government opined it was impractical to relate the payment of fees to a precise formula which can be reflected in legislation as, to do so, would involve administrative procedures and costs out of all proportion to the revenue collected or the benefits to be gained. The net effect might therefore be an overall further increase in fees. Major users would be consulted before the final form of the regulations is reached and before any changes to the form of those regulations are made in the future. Regulations imposing licence fees will, of course, be subject to parliamentary scrutiny and disallowance by either House and are reviewed on an annual basis. Present fees are currently under review but it was not the intention of Government to increase fees immediately and substantially.

Consultations between DOC and the WIA took place on 23rd June, resulting from a DOC written request for comment on the Bills. The Institute has replied in writing to the Minister that, notwithstanding the Constitutional desirability of enacting a separate Tax Act, an assurance is required that there should be no element of taxation as such in any licence fee required to be paid by amateur licensees, there should be no immediate increase and that any future increases should not exceed the CPI increase. The Institute also commented that, unlike commercial users of the spectrum, licence fee increases could not be passed on and, additionally, the amateur service should not be brought into any cross-subsidisation schemes with other services — the fees should reflect only a reasonable and proper cost recovery.

EXAMINATION FEES ALSO UNDER REVIEW

Here is the text of a letter received from DOC.

"You will be aware that Section 42 of the Wireless Telegraphy Regulations sets out fees to be paid by candidates sitting for various certificate of proficiency examinations. The Department is now planning to institute a new fees scale on a cost recovery basis.

Before the final form of the regulation is reached, the Department wishes to consult with your organisation. The Department considers that proposals for substantial fee rises are understandable in view of the effort it expends in conducting the examinations, and the fact that the current level of fees has applied for many years.

As far as amateur certificates are concerned it is planned to preserve the present categories and increase the relevant fees. However it is proposed that for such a certificate involving both a theory (including regulations) and a manipulative examination (i.e. code), two separate fees should be charged, one for the theory examination and another for the manipulative examination. This would mean for example that a person resitting a manipulative examination would only be required to pay the manipulative fee, rather than, as is presently the case, the composite examination fee.

"A further proposal applying to all categories is the introduction of a fee to cover the cost of issuing a certificate."

Consultations between the Executive and DOC have taken place. The WIA raised strong objections to the introduction of a fee to cover the cost of issuing a certificate in a letter to the Minister. The Institute is of the view that the exam fees should be fixed at such a level as to deter frivolous applications but not so high as to deter serious applications. Adequate notice of any increase is seen as desirable for potential candidates, along with the possibility of a phasing-in period. Coupled with these suggestions the Institute submitted that Novice licence candidates should retain a longer term credit for passes if they fail in other sections, and for other licence grades all passes should be permanent and not subjected to any time lapse.

THIRD PARTY — USA

From 25th June, 1982, a third party arrangement between the USA and Australia came into effect by the mutual exchange of letters.

The conditions relating to this arrangement are understood to be as follows:—

"No compensation may be directly or indirectly paid on such messages or communications.

Such communications will be limited to conversations or messages of a technical or personal nature for which, by reason of their unimportance, recourse to the public telecommunications service is not justified. To the extent that in the event of disaster, the public telecommunications service is not readily available for expeditious handling of communications relating directly to safety of life or property, such communications may be handled by amateur stations of the respective countries.

This arrangement will be applicable with respect to all amateur radio stations duly licensed by appropriate authorities of either the United States or Australia."

Amateurs are reminded of the conditions set out in the Handbook, particularly in chapter 6.

QSP

IREE — 50 Years

Fifty years ago, in 1932, the Institute of Radio Engineers — IRE (Australia) was formed by splitting off, "by mutual consent" from the NSW Division of the Wireless Institute of Australia.

During the 1920s, a number of members professionally involved in the new science of Wireless Telegraphy and associated activities, felt there was a need for a more professionally (and in some cases, commercially) orientated body to which similarly inclined colleagues could associate. Amongst them was Ernest Fisk — later to become Sir Ernest Fisk of AWA and the man destined to be the first president of the IRE.

By 1932 the WIA was well established in all States and it took about twelve months for the IRE likewise to set up a division in each Australia State.

There were, of course, many individuals who belonged to both organisations. Perhaps a notable example is a past President of the WIA, H. K. Love of Kingsley Radio, whose QSL card proclaimed him as MWIA and MIRE. Dual membership still exists today.

During 1964 the IRE became the Institute of Radio and Electronic Engineers — IREE when "it was concluded that Radio Engineering was really a branch of the broader field of electronics".

Today, with the greater influence of digital electronics, computers and fibre optics, perhaps the Radio Engineer is becoming a rarer member of the Engineering profession.

Indeed there are so many disciplines within the Communications/Electronics/Electrical Engineering fields that it is very difficult to define just where one starts and the other stops!

So it is with amateur radio, but whatever the mode or technique, it is still communications, and amateur "wireless" communications is the very reason for our Institute's continued existence.

To the President of the IREE, Professor J. Hillman, the Institution's Office Bearers and Members of the IREE, we send our heartiest congratulations on a successful first fifty years.

PETER WOLFENDEN VK3KAU
Federal President ■

WIA NEWS (cont.)

ITU RESOLUTION 640 — (BN)

One of the resolutions adopted at WARC 79 concerns INTERNATIONAL disaster communications. Strictly for the duration of any international disaster communication the Administration in the disaster country may authorise any of its non-amateur stations to use, under specified conditions, amateur bands as permitted, for the conduct of disaster communications. Such relief communications provided outside the disaster country shall not replace existing national or international amateur emergency networks.

The Resolution invites Administrations to provide for the needs of (a) international disaster communications and (b) emergency communications within their national regulations.

The DOC has sought the views of the WIA on this matter and discussions are expected to take place in the near future.

AUSTRALIAN TABLE OF FREQUENCY ALLOCATIONS

The publication of this Table is still awaited early in July.

IREE DINNER

The Federal President attended the IREE's 50th Anniversary Dinner held in Canberra on 28th May, on invitation by the IREE's President, to address the august company in response to the keynote address by Mr. Jack Curtis. Mr. P. A. Wolfenden duly attended and addressed the assembled members and guests on subjects including historical background and the present diversification of amateur radio activities.

RTTY FREQUENCIES

As the result of Federal Conventions on the subject, the Executive have been attempting to co-ordinate RTTY frequencies without much response. Two Divisional groups now suggest that the time has arrived when specific "Gentlemen's Agreements" should be prepared concerning this mode. The matter is in the hands of the Federal Technical Advisory Committee. Allied problems relate to the interference to RTTY transmissions by amateurs believing those that they hear on the bands are commercials. Similar problems appear to be surfacing in relation to other amateur digital-type transmissions. No doubt the operators concerned abide by the terms of paragraph 5.27 in the Handbook. ■

From 1920 to

D24 A NEW CONCEPT IN COMMUNICATION TECHNOLOGY

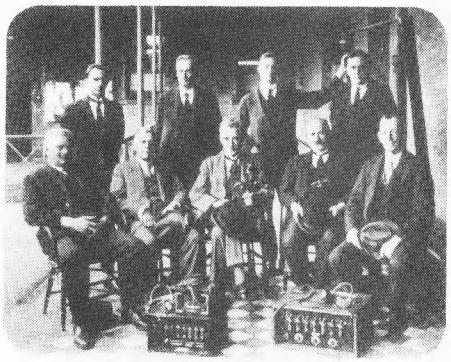
Bett McLachlan
Box 39, Mooroolbark, 3138

Emergencies and disasters are unfortunately a common day occurrence, whether it is a hazardous condition arising from a fault in a petro-chemical complex, a lost child in rugged bush country or a bushfire that may be burning out of control. To assist and co-ordinate such eventualities and also provide a service for day-to-day law enforcement communication that is second to none, the Victorian Police commissioned a complex to be built at a cost of $4.6 million which is Part One of a three stage plan that will adequately service their needs into the twenty-first century.

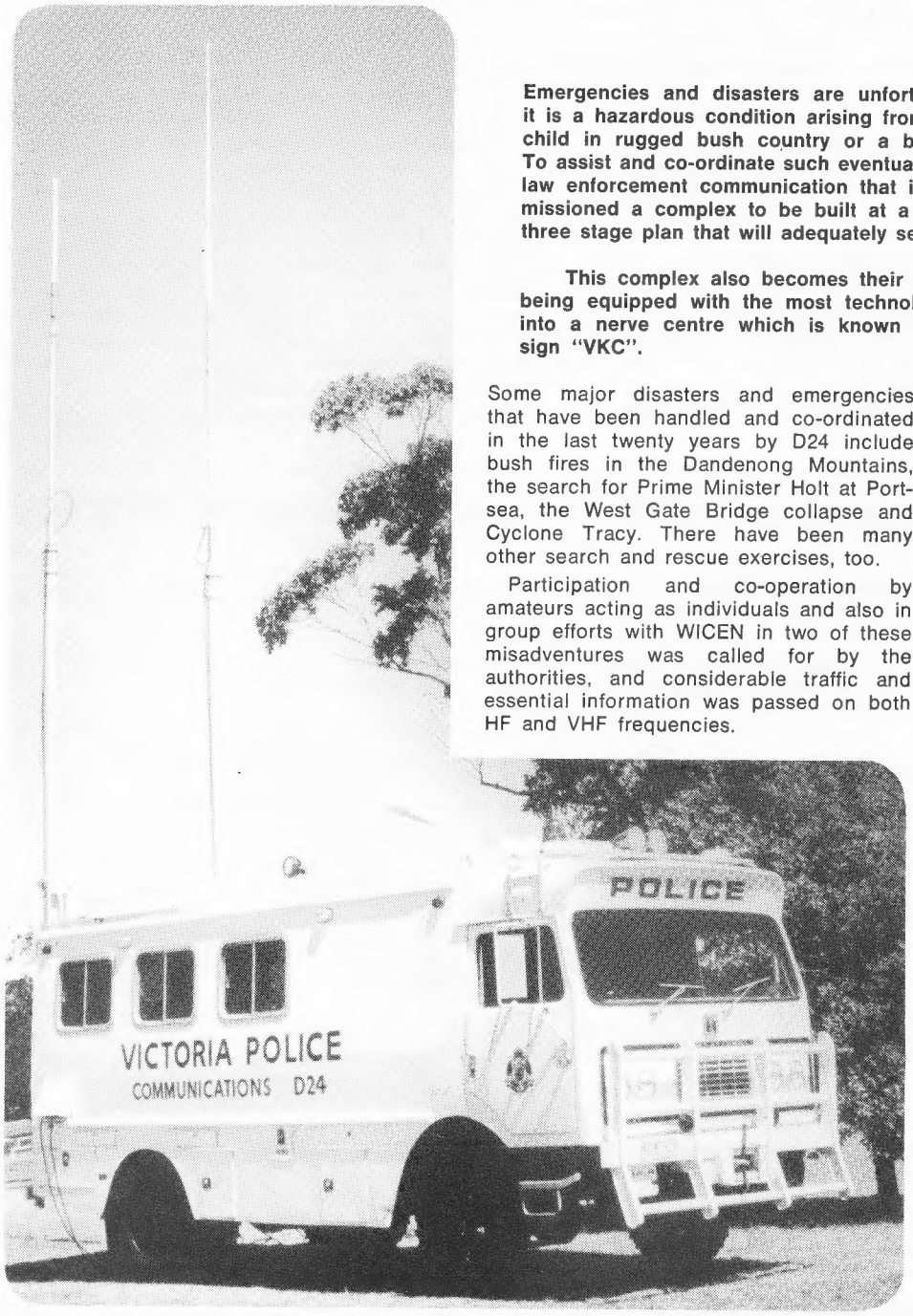
This complex also becomes their communications network for the whole State, being equipped with the most technologically advanced equipment available, built into a nerve centre which is known to all as "D24" and has the allocated call sign "VKC".

Some major disasters and emergencies that have been handled and co-ordinated in the last twenty years by D24 include bush fires in the Dandenong Mountains, the search for Prime Minister Holt at Portsea, the West Gate Bridge collapse and Cyclone Tracy. There have been many other search and rescue exercises, too.

Participation and co-operation by amateurs acting as individuals and also in group efforts with WICEN in two of these misadventures was called for by the authorities, and considerable traffic and essential information was passed on both HF and VHF frequencies.



Police members involved in the first Wireless Patrol, including the Commissioner.



One of the communication vehicles.

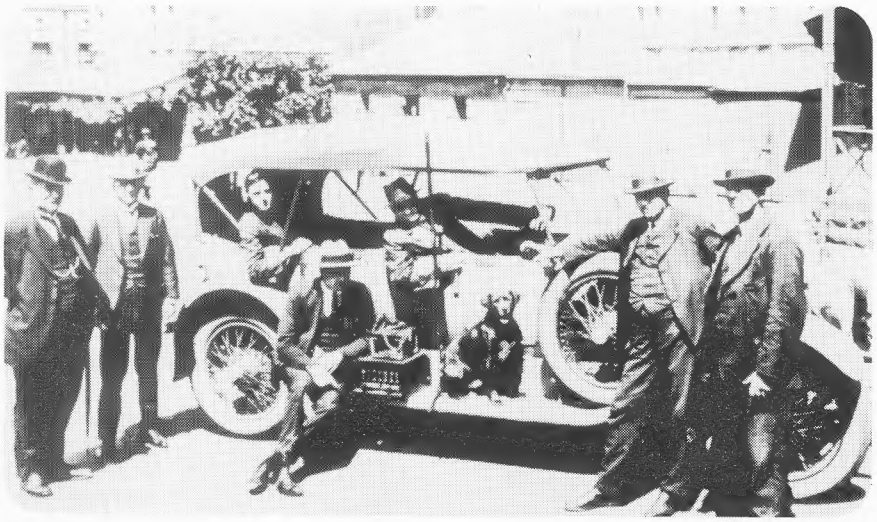
Probably one of the first invitations by the Victorian Police for assistance by amateurs would have been on the 9th July, 1948, when the Maffra Police requested communications for assistance in the search for a lost boy in the Tinamba area.

HISTORY

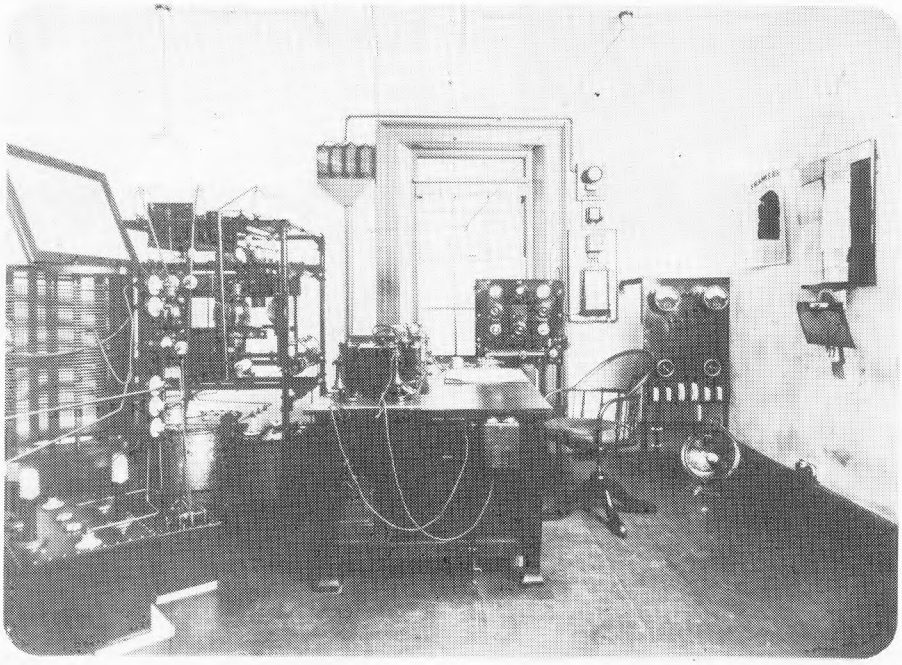
To fully understand the development of D24, a brief history of the Victorian Police Force's communications and development since the inception of the first mobile installation is outlined here, including some actual photographs to illustrate the major updates from the 1920s to the present new equipment which was officially opened in May this year, so that readers may judge the progress that has been made.

BRIEF DIARY OF EVENTS

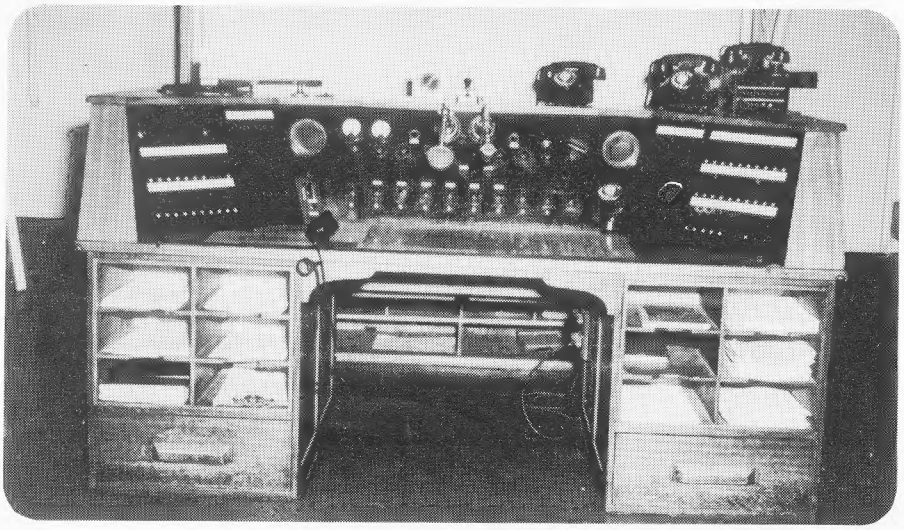
1921 Constable Downie examined the possibility of wireless communication in police cars.



A police car in early 1929. The transmitter and antenna are mounted on the "running board".



1926 . . . The first 2 kW police radio transmitter. Note: The final tank coil on the LH side for 160 metres.



The control room console as it was in 1939.

1922 First voice transmission to a patrol vehicle over a distance of 15 miles.

1923 CW was introduced as telephony was found to be inadequate. One way transmission to the car only.

One of the first operators was a radio amateur, the late Dick Dowling VK3XD, who in the late 1950s happily recalled on air that he had been promoted from a "Footpath Engineer" to working with Morse code in a car to receive directions in his early days with the Police Force.

1926 One 2 kW transmitter installed at headquarters.

THE LISTENER IN on September 4th, 1926, headed an article "Police officials proudly boast that the new receiving and transmitting wireless set installed at police headquarters recently at a cost of 1,200 pounds, comprises the finest police radio section in the southern hemisphere".

1928 First cars fitted with two-way radios.

1939 D24 first set up. It is interesting that D24 came from the communications centre which was planned and was to be located in Room 24, Corridor D, at police headquarters. However, fate intervened during construction, Room 24 was partly demolished and the equipment was located in Room 23; however D24 stuck and it has been known by that name ever since.

1940 CW superseded by telephony.

1941-1950 Communications set up with other States.

1953 Development of radio communications with country areas.

1957 1630 kHz AM superseded by VHF.

1967 Telex communication introduced.

1970 SSB operation introduced.

1972 Four UHF channels for portable and mobile networks available.

1974 Single channelling upgraded to three channels and a general upgrading of D24.

1982 Official opening of the $4.6 million D24 Communications Complex.

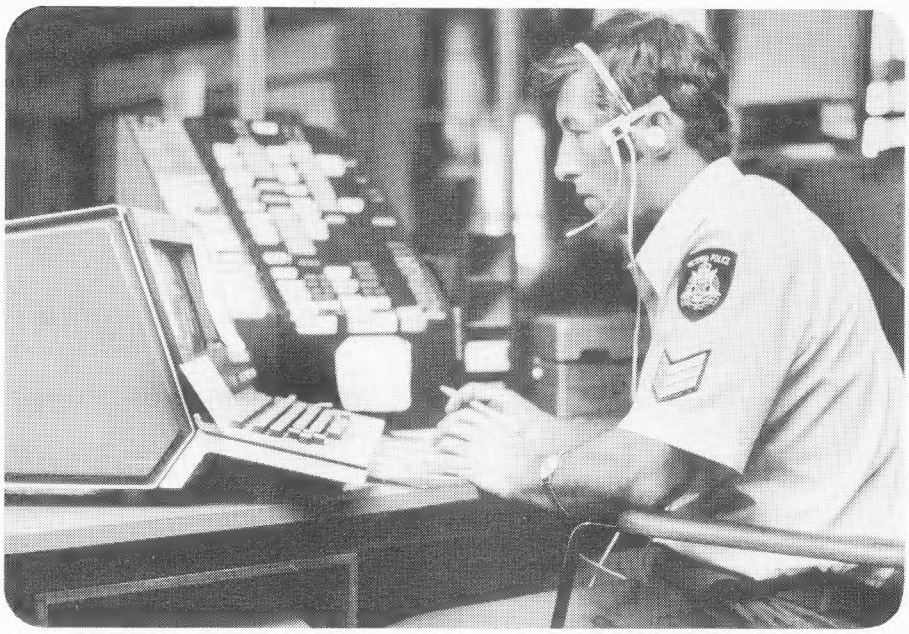
VERSATILITY

In an air-conditioned completely self-contained and high security protected environment, where entry and exit is only possible by presentation of an electronically coded card, and all areas are scanned by variable rate security cameras, is housed the most sophisticated and modern electronic wizardry available today.

The heart of the system is a MASCOT 1000 Radio Control System which is distributed and serviced in Australia by Philips-TMC. MASCOT is derived from the description multi-access control operator terminal, which this system truly is.

Up to fourteen operators who have the choice of using a normal handset or an ultra light headset (which appears to be the most popular) can handle incoming calls from the public that require police

Updated as in 1959.

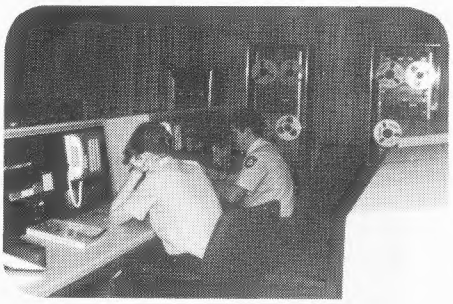


One operator as seen prior to 1982.

assistance or action with an average waiting time for the caller on the new system to be answered of FIVE SECONDS. Some 26,039 calls were averaged weekly to D24 in 1981, and the growth figure is in excess of 4 per cent per month on the latest figures available. All calls are recorded on banks of 40 channel tape recorders with facilities being available for instant playback if required.

Details of the information are documented by the operator on cards which are date and time stamped then despatched to any of up to 16 controllers, who can man the communication consoles at any one time, in a matter of seconds from the initial request by an endless segmented communication belt which runs down the centre of the area and is shared by all controllers.

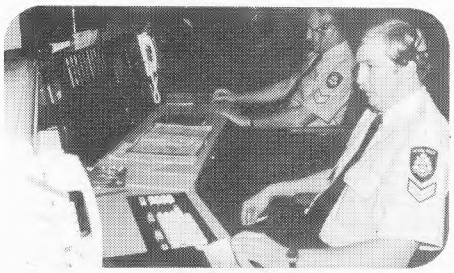
The radio consoles, which are of a modular design fabricated from aluminium extrusions, are a sight to behold, and each controller generally has five channels at his disposal (transmit/receive on any one channel and monitor any of the other four),



Phone control operators operating position with tape recorder in background.

however this configuration can be altered to suit conditions by five thumb wheel switches which give unlimited flexibility allowing access to any assigned frequencies up to a maximum of 99.

Generally the operator only uses the one assigned to the district he is controlling. He or she has all the mobile units at their disposal, their availability being indicated by an optically driven status card system that has not moving mechanical parts, together with all of the other equipment which is placed in easy reach of the operator to minimize fatigue.



Assistant controller in foreground operating the main computer VDU and keyboard. Radio controller in background.

A matrix of high contrast low brilliance LED indicators backed up by audio alarms instantly indicate calling units, frequencies in use and other pertinent details for efficient operation of such a system and all control switches for dependability have a guaranteed life expectancy in excess of 1,000,000,000 operations. Fail-safe circuits are incorporated throughout the entire system, ensuring round-the-clock dependability.

As the suburban, outer suburban and country areas are divided into areas which are serviced by strategically placed repeaters and to ensure signals being received by the control centre are always of the best quality obtainable, a voting and steering system has been incorporated, which monitors the incoming VHF signal from the mobile and transmits telemetry signals on the UHF link which are above the received audio. This coding is then compared with the adjacent repeater's reception and the strongest path is chosen. This is constantly updated and a visual indication is available to the controller on the console where, if he so desires, he can override the automatic management and manually control on certain applications.

Country area operators have access to SSB tranmission frequencies as well as VHF facilities and these are controlled in a similar area on identical consoles which are located at the rear of the main control room.

With the accent on operator comfort, the designers ensured that on the transmit path a change of plus or minus fifteen dB would only result in a change of plus or minus three dB to the recipient station, whilst the controller would only incur a plus or minus 1.5 dB change for a 7.5 dB change to the repeater receiver. Signal/noise ratio would be better than 55 dB and the maximum audio distortion would not exceed 5 per cent.

Each of the 16 controller positions (that comprise an operator and an assistant) also have, at theiir disposal, an illuminated slide screen street directory which is identical to those carried by the mobile units and can be changed page by page by a sequencing call up code. The assistant operator sitting alongside the controller has the control of a computer from which pertinent information can be retrieved in a matter of seconds.

Special circumstances require expertise, and the two duty supervisors who are located between the telephone operator and radio controller positions, aside from having instant communications with any operator and outside services, also have at their disposal a Micro Image display, which can contain up to 2,000 procedures which are to be adopted in case of specific incidents. The desired requirements are typed in, within seconds the files are searched, found, displayed and hard copies are made if desired for the operator's convenience.

All operators, to avoid fatigue, rotate duties every two hours, and the centre is organised so that minimum briefing is required to the replacement crew for a flowing continuity of ongoing operations.

Every operation is monitored by the duty officer, in an adjoining area, who has visual and audible status indicators that give indications as to the workload at that time. This is complemented by a small computer that has the capability of monitoring 640 points that analyse and detail the overall picture on a VDU.

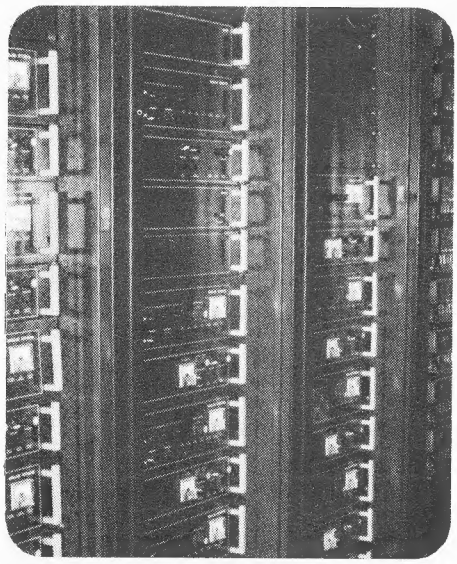
This computer can be programmed to detail such items as the time taken to answer an incoming phone call, the time spent on the assistance given, the workload of an operator over any given period, and a hard copy read-out is generated which is segmented into half hour periods for each 24 hours of operation.

The same computer also analyses the telemetry signals from the repeater sites with such indications as transmitter or receiver malfunctions, low supply voltage or other variables, and this information is brought up on a visual/audio alarm, where a further analysis can be displayed on to the VDU and a print-out can be generated for necessary action.

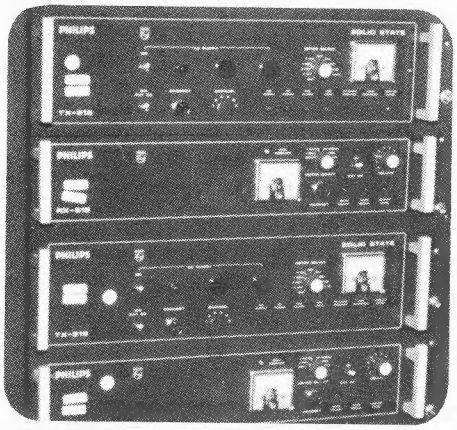
TRANSMITTERS

All control wiring from the consoles, which contain only the minimum of electronic equipment, is terminated in an adjacent area which is ideal because the activities of the control room are not disrupted for routine maintenance or planned future additions to the system.

The VHF repeaters in various areas of the State are fed from UHF links which are, as all the other equipment, solid state, using a 24 volt rail, compact in design and feature extensive shielding. These units are housed in standard racks for ease of regular maintenance, serviceability and future additions.



Partial view of the UHF transmitter rack.



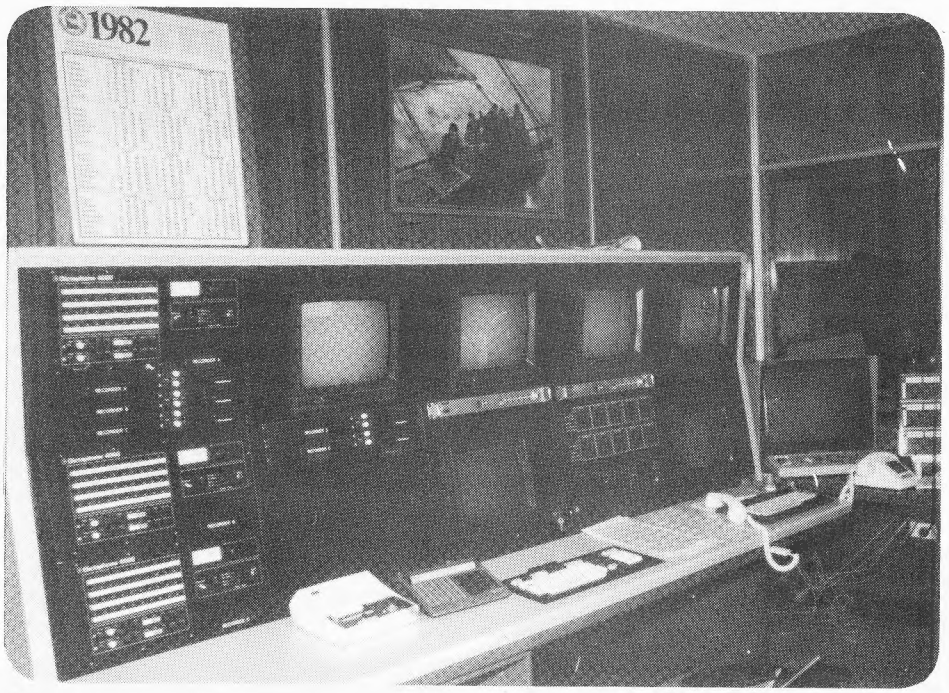
Close-up view of some of the transmitters.

DISASTER SITUATIONS

Further forward thinking by the designers of the complex included in the design provision to co-ordinate up to three major disasters at any one time which would be under the control of a Commander or officer of high rank.

Disaster Room showing consoles.

This separate room is divided into a Master Control/Observation area, which overlooks consoles which are similar to



Duty officer's control and monitoring area. Computer and VDU on RH corner of console.

those in the communications area and several telephones which are for the use of essential services that may be called in to assist, such as the Country Fire Authority, State Emergency Service, WICEN and others that can contribute pertinent expertise and assistance to the special emergency or disaster that is being handled.

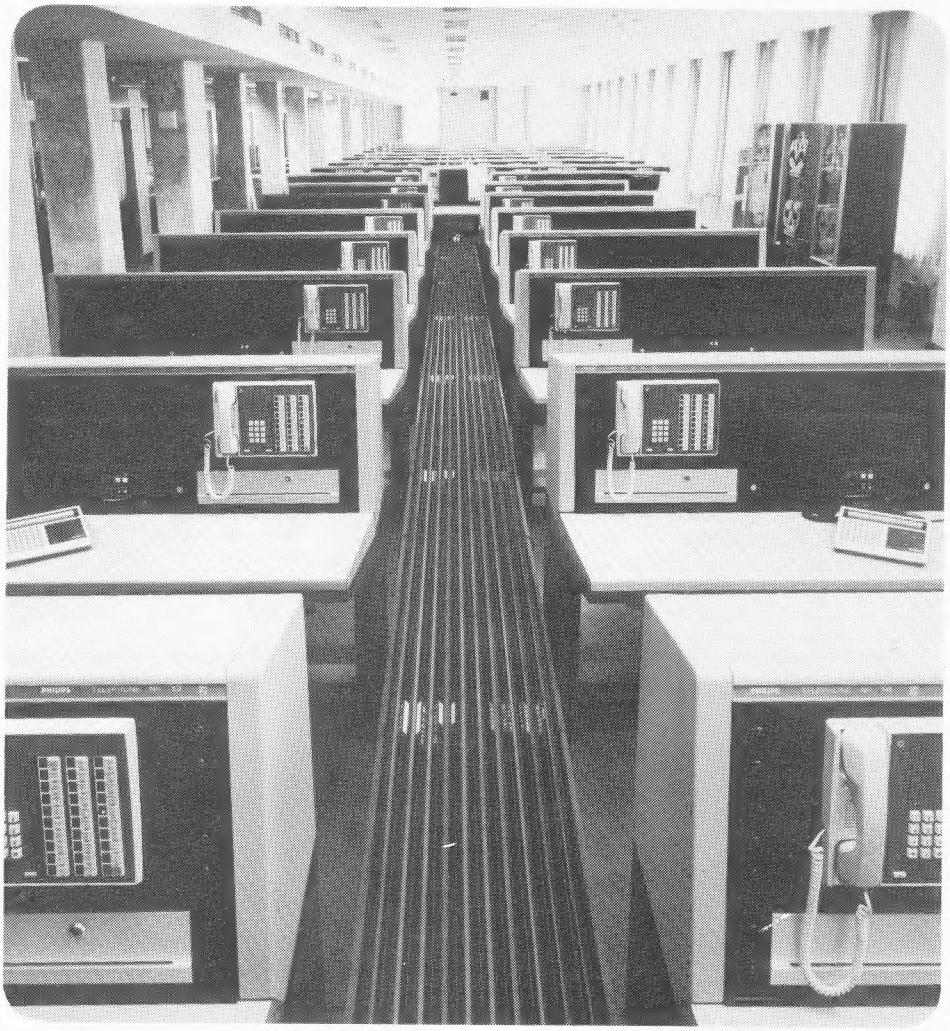
Telephone operator at the console and the OIC of D24.

The OIC has four colour TV monitors that would be tuned to television stations transmissions which would give on site pictures of developments. Other facilities include video recorders that can be patched for instant or later retrieval of information for evaluation of the situation.

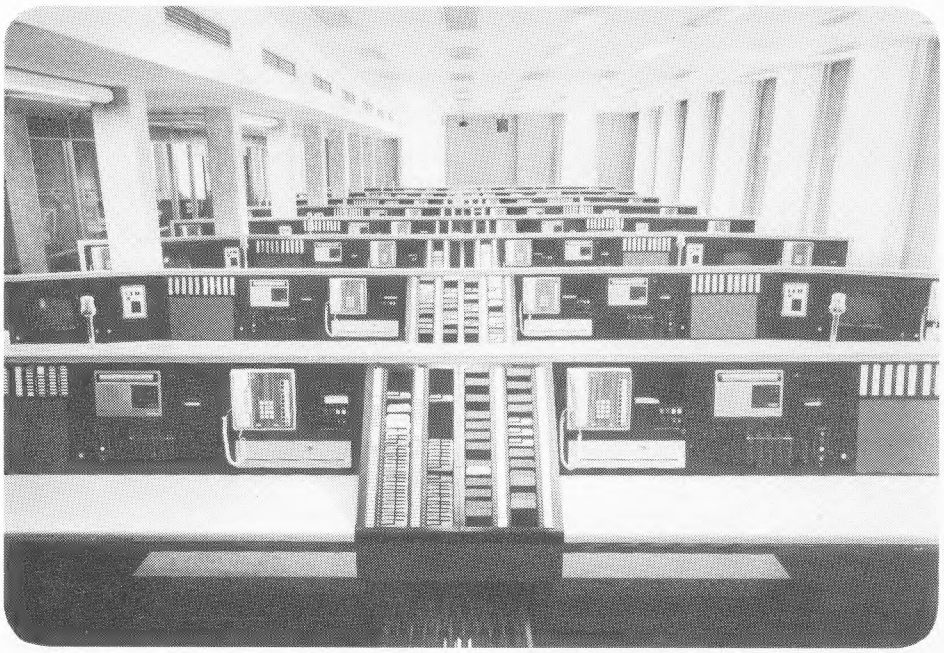
Conveniences that are on hand include monitoring of any of the channels in use back to the Master Control area, intercommunications to each operator, outgoing communication lines and provision is made that a rest area can be made up in an adjoining area for the OIC if the emergency is of a prolonged nature.

PORTABILITY

Disasters and emergencies never occur at a convenient time or place. With this in mind it was necessary to obtain vehicles which could handle any terrain in all weathers that would be inaccessible to conventional transport. It was also necessary for them to be completely self-contained. Any deviation from obtainable production models meant that units had to be custom built to rigid requirements and specifications.

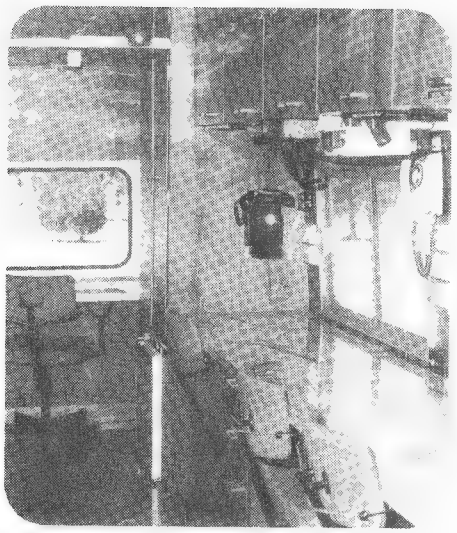


A general view of the NEW main control room at D24. In the foreground are the telephone operators desks, to the right are the multi-channel tape recorders, centre is the continuous communication belt which carries cards from the telephone operators to the radio controllers.



Radio controllers console area. The card system (centre), radio controls, visual street map directory screen and main computer VDU are shown on each side of centre.

The units designed for the Victorian Police are four-wheel drive, air-conditioned communication units that are control centres on wheels. Built into these vehicles are the main attributes that are described for the master centre. These units, known as VKC4 and VKC5, can be placed in strategic positions so that the two hydraulic telescopic masts which can fully extend to some 80 feet with antennae fitted would allow communication from the remotest area, even to the extent if neccessary of using one at the command post which could be located in a valley and out of communications with D24 and another on a hilltop acting as a repeater, having all the refinements of telemetry control via a UHF link, thus giving the command post complete access to the State network.



Partial interior of communication vehicle.

Teleprinter and facsimile facilities, a 5 x 12 Telecom switchboard, aeronautical, marine and HF bands are available to the control operators. This modern equipment also allows uninterrupted contacts with UHF hand-helds, the Air Wing, Boat Squad and other services that are being co-ordinated in the area.

AIR WING

Another proud possession which is under the control of the Air Wing and is invaluable to search and rescue duties and general law enforcement is the Aerospatiale DAUPHIN Helicopter, which is powered by two Turbomeca Arriel turbine engines.

The DAUPHIN has seating capacity for 14 persons, including the pilot and a usual crew of two observers/winchmen, who have control of the electrical winch that can be used for various tasks. The winch cable is usable to 90 metres (295 feet). The seating area can be re-arranged to an ambulance configuration if necessary.

This unit has a round the clock standby crew that can have it on its way to an emergency situation in minutes and it is not restricted to daylight operation. Also, it is equipped with essential frequencies and navigational aids and a solid state audio amplifier that drives two 400 watt speakers.

Another feature of the DAUPHIN is its searchlight. This Zenon NITESUN light is rated at 30,000,000 candlepower and has no difficulty in lighting a large playing area such as the Melbourne Cricket Ground.

WATER POLICE

An article on the importance of communications and some of the Search and Rescue facilities that are available would be incomplete without mentioning another group of men who are seldom heard of but play an essential role in enforcing law and order on a coastline of 1,100 km and numerous inland lakes and reservoirs, including Lake Eildon, which is the second largest lake in Australia.

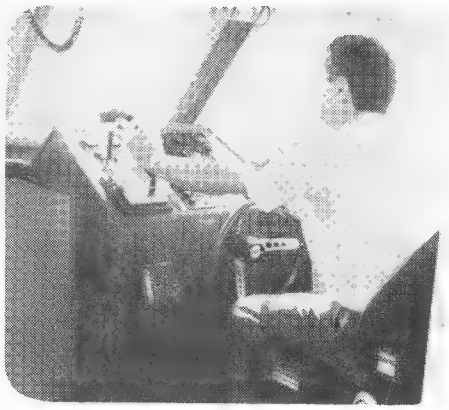
Law and order is only a small part of the duties performed by the Water Police. Search and Rescue operations, activities of liaison with volunteer Coastal Patrols (which assist in many rescue operations), the Commonwealth Coastal Surveillance

The Dauphin in flight.

This graceful and versatile machine, which is often seen around Victoria, has a range of 310 nautical miles, a cruising speed of 125 knots (230 km) per hour and a maximum speed of 170 knots (315 km). It is able to travel from Melbourne to Wagga (NSW) in under the hour if necesary at maximum speed. For the aviation-minded, the fuel capacity is 920 litres of Avtur Jet A1. To the layman this means 202 gallons of aviation kerosine.

Centre (which is situated in Canberra), assisting the RAAF in the training of Orion crews in the dropping of emergency equipment and supplies, education of prospective boat owners, advice to authorities on the proclamation of safety areas are some of the other many and varied duties they perform.

Fully trained marine crews are on standby, being in readiness for any emergency anywhere in the State. All coastal vessels



On patrol with the Kayfa craft.

are equipped with compatible communication equipment that allows access to the D24 Control Centre on VHF. They also have at their disposal, radio equipment with suitable frequencies for liaison with Volunteer Coastal Services, Marine Services and some aircraft.

The flagship of this small but important group is a 17 metre steel hull vessel named the "REGINALD JACKSON", after a former Police Commissioner, and is powered by twin Ford 6 cylinder 150 h.p. diesels. This vessel is self-sufficient in all aspects, including cooking, refrigeration and sleeping facilities for a complement of ten. Radar and Sonar navigational aids are included in the equipment, as is a 5 metre aluminium "runabout" with a 55 h.p. engine.

One recognised advantage in the search and rescue arena is the recent acquisition of two new vessels for use in the Port Phillip Bay and surrounding waters. These nine metre aluminium craft, known as the KAYFA C30 Class, carry all the most commonly used radio and electronic equipment, included in which is a FURUNO RADAR system that has a scanning potential of 48 nautical miles.

These modern vessels are powered by twin Volvo 155 h.p. diesel engines and have a range of 650 nautical miles at a cruising speed of 18 knots. Accommodation allows for the normal crew of two to spend unlimited periods at sea insofar as ordinary operations will allow.

Inspector Ray Applebee, the OIC of the Water Police, is disturbed that volunteer coastal patrol organizations cannot operate efficiently and, in some cases, cannot operate at all, because of the lack of trained personnel, particularly radio operators. In Inspector Applebee's own words, *"The population of trained radio amateurs throughout Australia should be able to become involved and participate in assisting the already established Volunteer Coastal groups that patrol our coastline and waterways and cater for some 98,000 registered motor vessels and an estimated thirty to forty thousand miscellaneous other vessels in Victoria alone. Assist in preventing a disaster and maybe saving a LIFE by contacting a Volunteer Group close to you . . . NOW! There are many in need of the expertise developed from your hobby."*

THE FUTURE

Throughout the communications equipment described, ample provision has been made for growth with the communities' needs, extra channels when they are made available, the installation and commissioning of more repeaters, all vehicles to be updated to UHF equipment as finance is available and the further development and installation of Telephone Automatic Repeater Access (TARA). TARA allows access to and from a mobile unit back to an unmanned police station base unit, then by land-line to the nearest continuously manned station, which allows instant communication for assistance or advice as required.

This innovative plan, which is accomplished by coding of the signal from either source, will be invaluable for officers on duty in outlying areas of Victoria, not being in range of a repeater and particularly those who patrol a vast "one man" territory.

Over half a century later, THE LISTENER IN's remarks, "comprises the finest police radio system in the Southern Hemisphere", are endorsed. Congratulations to all engineers, technicians and operators, past and present, on such a fine achievement.

ACKNOWLEDGEMENTS:

Mr S. I. Miller, MBO, OStJ, QPM, Chief Commissioner of Police and Staff.
Chief Inspector A. Campbell, OIC D24.
Inspector J. E. Knight, OIC Air Wing.
Inspector R. Applebee, OIC Water Police.
Technical Officers attached to D24
Staff of POLICE LIFE for photographs and assistance.
Mrs. Anne Pavey, Public Relations Officer, Phillips TMC
Peter Dodd VK3CIF, copy of THE LISTENER IN.
Dave Shaw VK3DHF, for photography and processing.
Herald Archives.

For the technically oriented reader, a description of the equipment that was first installed is reproduced as described in THE LISTENER IN:

"The set has an input power of 2 kW. Four Marconi valves are employed, two as oscillators and two as rectifiers. ICW is obtained by means of a motor-driven chopper. The transmitter operates from 230 volt single phase current, which is stepped up to 10,000 volts, and rectified before being fed to the oscillator plates. The filament consumption of each valve is ten amperes at 16 volts. The set is inductively coupled and employs a "reversed feedback" circuit. The closed circuit is coupled to the aerial by two coils acting normally in opposition, and the chopper alternately connects and disconnects one of these coils when signalling, thus producing an Interrupted Continuous Wave. The range will cover any place in the Commonwealth, and a secret code will be used so that messages cannot be intercepted by criminals, who may attempt to frustrate the efforts of the police by carrying wireless sets themselves." ■

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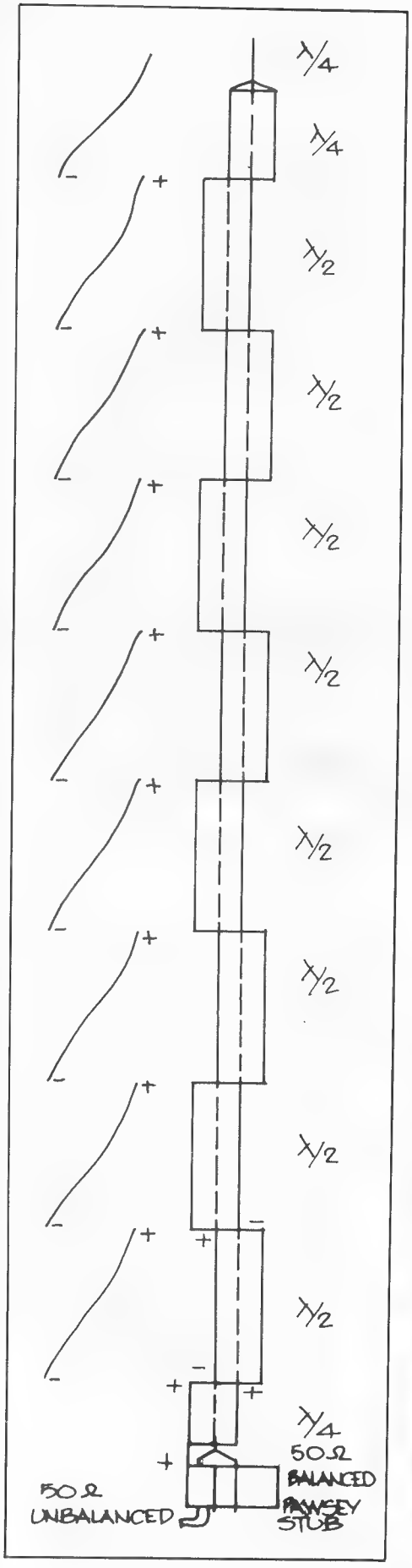
WELL . . . I CAN DREAM, CAN'T I? by Bandel Linn K4PP

"We recognise your service to the community as an amateur! Therefore, your bill is cut in half!"

From 73, March 1982



Crackerjack Antenna

Daphne Fenton VK2KDX
10 22nd Avenue, West Hoxton, NSW 2171

With so many amateurs now operating on 70 cm, it was thought a description of an economical and easy to construct 70 cm antenna might be appreciated. Sid. VK2NQ, an engineer, modified, constructed and tuned up this aerial, and handed it over to Nev. VK2ZBQ for field testing. We often take this aerial operating S/Mobile and Mobile and found it performs very well. Nev. VK2ZBQ named it "The Crackerjack".

This is a 70 cm high gain omnidirectional base/mobile coax colinear antenna designed in response to requests by several 70 cm operators.

The details of this low cost efficient base station aerial are given.

FEED POINT: 50 ohms impedance.

SWR: Between 1.1 and 1.25 from 433.025 MHz to 439.00 MHz.

GAIN: Claimed to be 6 dB.

LENGTH: 8 ft. 8 in.

MATERIAL: Cable type RG-8/U; pawsey stub, 2 x 6⅜ in. of ⅜ in. OD copper tubing; plug type, PL259; light timber pole.

The aerial was operated at this QTH and portable at Rossmore, Hilltop, Thirlmere, Richmond, and Macquarie Felds, competing against a commercial mobile array.

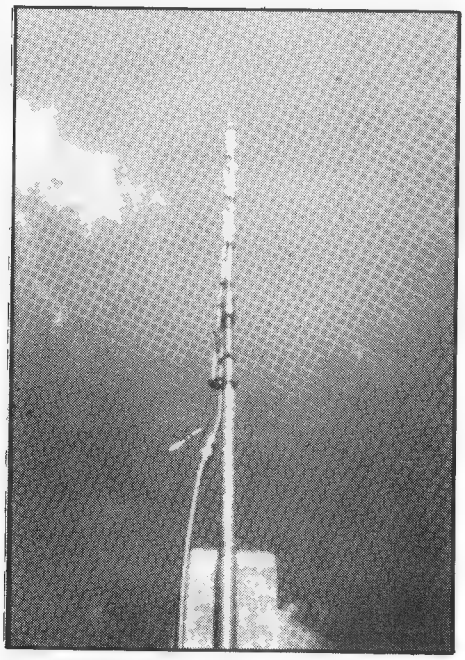
The signal was approximately 2S points up on the commercial.

The aerial is a scaled down version of a 2 metre aerial described in the ARRL 1976 Antenna Handbook (13th edition) pages 248 and 249. A modification (several additional half-wave elements) was worked out by Sid VK2NQ, who also did all the construction and tuning-up.

This aerial was partly described in the Liverpool and District ARC Bulletin sheet for March 1981, and also in the January 1982 ALARA Newsletter.

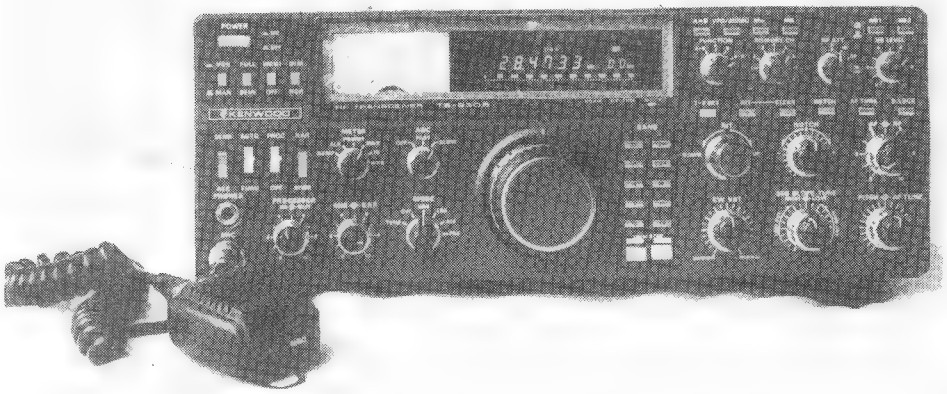
For any further information contact Daphne VK2KDX by arrangement on air or by letter. Demonstrations can be given. ■

Crackerjack mounted on Car



Crackerjack as a Base Station Aerial

EQUIPMENT REVIEW



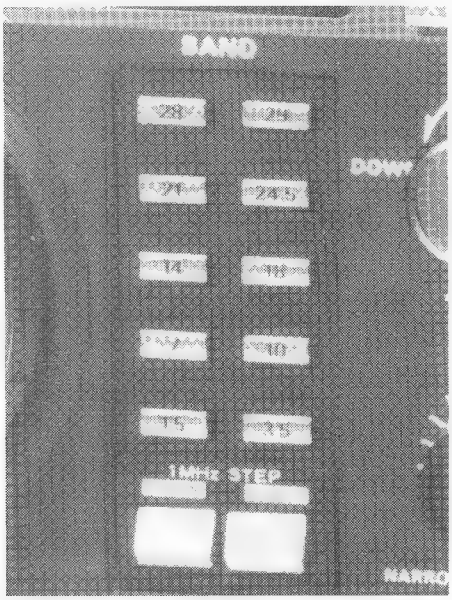
KENWOOD TS 930S TRANSCEIVER

Dave Shaw, VK3DHF,
9 Milton Street, Heathmont 3135

On removing the unit from the well packaged shipping container, one is impressed with the dazzling array of controls and indicators that confront them, but with a top market rig such as this, you would probably feel cheated with anything less. All the features you would expect to find in any modern transceiver are incorporated in this aesthetically designed package although the controls may be labelled differently and it has many further exclusive features to offer.

In line with modern transceivers of this type, the unit is capable of continuous reception from 150 kHz to 30 MHz. The next adjacent MHz section being selected automatically as soon as the dial reaches 0 or 1000 kHz respectively, or the unit may be stepped in 1 MHz segments to reach the required reception frequency with a minimum of fuss.

On transmit, each of the amateur bands, 160 through to 10 metres including the WARC 30, 17 and 12 metre bands is catered for with its own momentarily actuated press selection switch which is located on the right hand sided of the front panel. Only the present amateur bands are enabled, 10 MHz was not available as lockout circuitry was still installed on the test rig.



The operating frequency is now set via the main tuning dial, which is a finely and accurately machined heavy metal casting, that gives a nice feel reminiscent of the tuning on an old valve console radio. Although the main tuning is initially in 10 Hz steps it is no problem to scan from one end of the dial to the other. This is because the main tuning automatically increases its scan rate if a speed of faster than 5 to 6 revolutions per second is used, so with a couple of spins one can easily move from one end of the band to the other. A dial lock facility is also incorporated.

The display is a delight to behold with its bright white numerals which can be dimmed, as with the other red status indicators clearly visible on the flourescent display. As well as the main digital readout, which indicates to the nearest 100 Hz, there is also a digitized analogue display which indicates the 20 kHz segment being operated. This is done via an extra scale under the main digital readout, the particular 20 kHz segment being indicated by a red flourescent pointer. This feature functions well with the main tuning as, without it, tuning quickly across the band would not be as easy as the fast changing digits would be extremely difficult to follow.

The display also indicates the RIT operation and offset by a red ON and separate digit indicator. The RIT allows offsets of up to ± 9.99 kHz. This RIT offset can be cancelled as it, as well as the main tuning, use photo choppers with suitable memories.

Another method of tuning the receiver is by the scan buttons on the microphone. Upon pressing either the UP or DWN button, after a short delay, the transceiver will count in five 100 Hz steps, initially at a slow rate then increasing to approximately 5 kHz per second. This was found to be a dubious advantage for SSB signals as it is not possible, without a certain amount of manual dexterity, to easily tune to a particular frequency, although on the SW broadcast bands with AM reception it was extremely handy. To allow for varying AGC requirements, fast and slow rates may be selected or the AGC may be disabled completely for the reception of very weak signals.

Dual VFOs are incorporated to allow split frequency operation with either VFO available for transmission or reception. The operating VFO is indicated in red on the main display module. When in the receive mode, the transmit and receive frequencies may be momentarily interchanged and altered if necessary by a front panel push button. Another button sets both VFO's to the same frequency.

There is a total of eight memories available which contain frequency and band information, these being expediently set by the MIN button. Battery backup is provided for retention of the memory contents in the event of mains failure. If the batteries are not installed, memory and VFO frequencies are retained when the transceiver is left connected to the mains.

The memories may be recalled by either the VFO/MEM switch, which will put the transceiver onto the selected memory frequency, with the two VFO frequencies being retained, or by the MR push button which will replace the frequency set in the VFO with that from the selected memory. This is handy for net frequencies that Murphy will ensure are at least a couple of kHz away from that which is in memory.

In receive the transceiver has the most comprehensive range of adjacent channel, noise, "Woodpecker" and tone rejection facilities that I have had the pleasure to use.

There are two noise blankers available. One is for pulse type noise with the level of blanking being set to requirements by the front panel control, and it is most effective. As a vertical antenna was used for the tests and the QTH's proximity to a major highway in a Melbourne suburb, plenty of opportunities were available to check this inbuilt feature. The other blanker is especially for the "Woodpecker", unfortunately, during the on air testing, the "Woodpecker" was not to be found, which goes to prove that it can be annoying even when it is not there!!

Another source of interference prevalent on our crowded bands, carriers, are efficiently nulled via the notch filter when activated. Its operation is indicated by a LED located below the readout. The effective range is centred around 1.5 kHz and covers the pass band of the receiver.

With interference from other SSB signals the slope tune controls are used. These allow narrowing or adjusting of the apparent IF bandwidth. Two controls are incorporated, high cut which moves the edge of the response

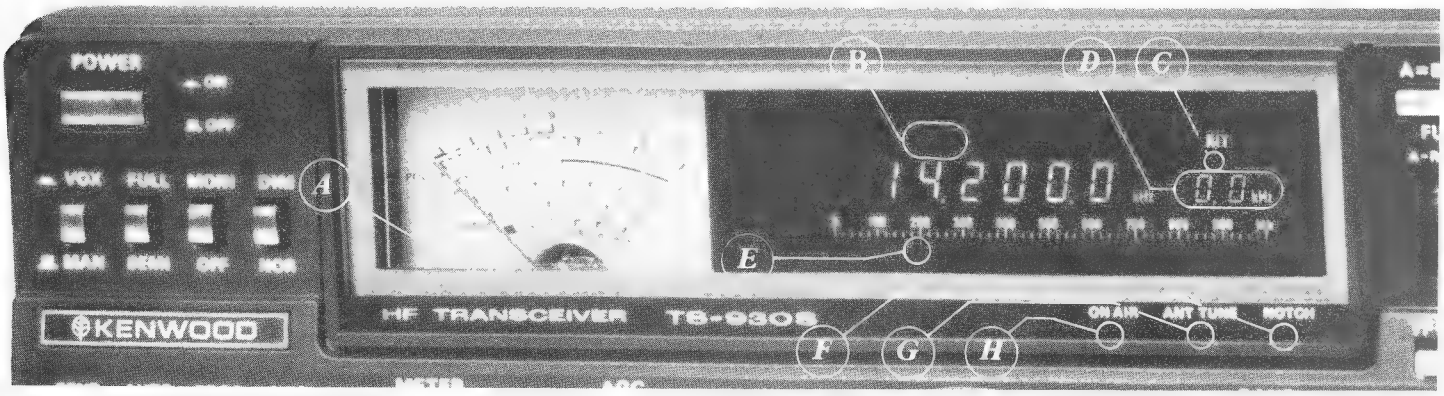


Photo showing (A) 7 function "S" Meter, (B) Enabled VFO, (C) RIT indicator, (D) RIT ± Frequency offset readout, (E) Band area indicator, Indicators — (F) ON AIR, (G) ANT TUNE matching load to finals and (H) NOTCH filter enabled.

on the high frequency side of the passband whilst the low cut operates on the low frequency side.

During CW reception the bandwidth as a whole may be adjusted with the CW Variable Bandwidth Tuning (VBT) control. This control has variable filtering effects dependant upon whether or not the optional filters are installed.

With the standard 2.4 kHz filter the VBT's range is 2.4 kHz to 600 Hz, with the optional YK-88C-1 filter the range is 500 Hz to 150 Hz. Further selectivity can be achieved by the use of the Wide and Narrow Bandwidth filter selector facility. Additional rejection of signals outside the audio pass band on CW is provided by an audio filter, centred on 800 Hz, adjustable to ± 400 Hz. When engaged, it is then peaked for the desired signal.

The transceiver will operate in SSB, CW, AM and FSK without fuss, however no FM option is available. Reception of any signals in the various modes was no problem, be it a Shortwave AM station or attempting to read an SSB transmission in the crowded amateur bands, as the slope tuning gives the operator more than a fighting chance.

In transmission no compromises appear to have been made either. The output stage employs two MRF422s in push pull which are operated from a regulated 28 volt supply to limit inter-mod distortion.

Transmission tests received good reports, with the audio being crisp, clear and clean. A monitor facility is available to personally check, with the aid of a pair of head phones, the transmitted audio quality. In this function, a portion of the transmitted signal is fed into the receiver circuitry.

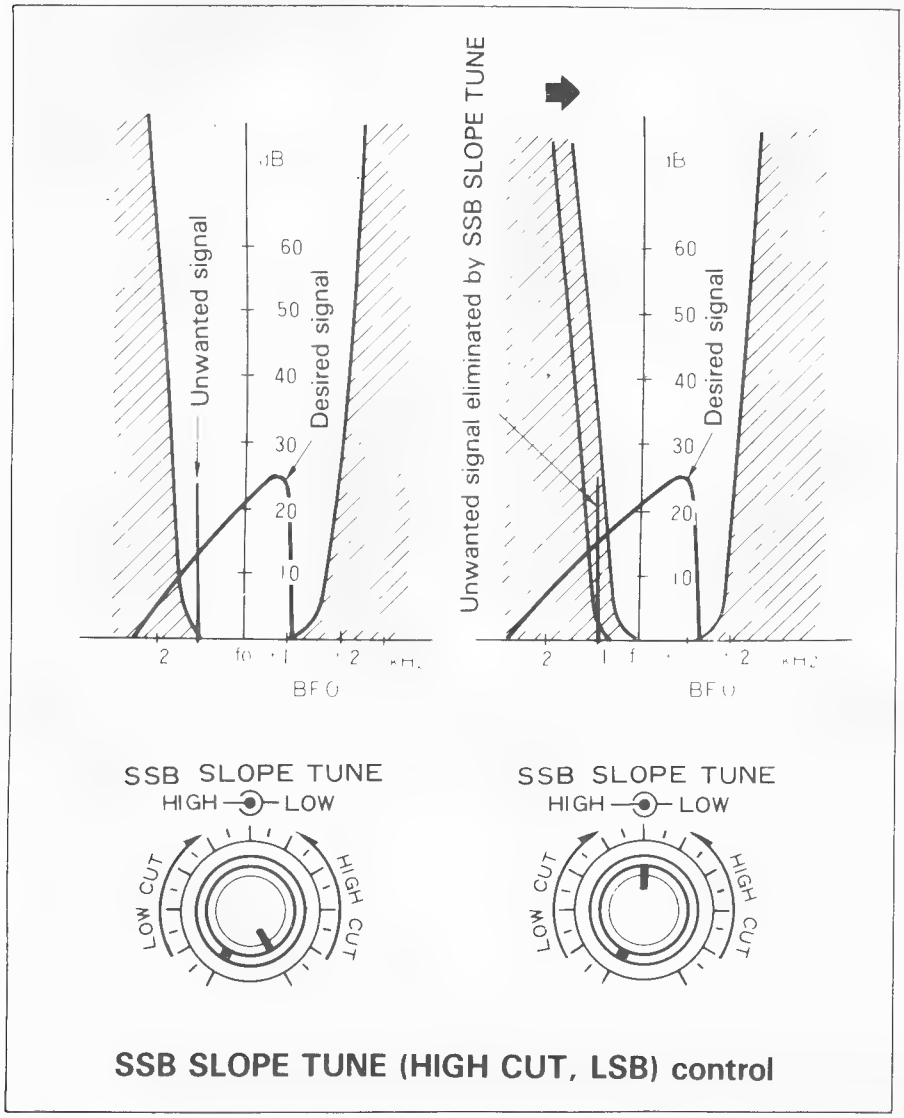
The speech processor, when switched in, has dual controls. Processor IN adjusts the compression level as set with the meter indicating compression or by the monitor facility. Processor OUT, which varies the output level, is set by the meter in the ALC. This control also sets the carrier level in FSK. If the processor is out the microphone level is set with the MIC control.

This processor is almost worth a linear, with it in operation similar reports were received to those given when working DX, not all the stations worked were using a linear, however most were. The compressors effect was noticeable only on its increase in signal readibility with little or no perceptible distortion when correctly adjusted.

With CW, the carrier level is set by a front panel control and once transmitting, the output can be monitored and its tone set via the pitch control. When in the FSK mode, the only requirement is a keyed input as a frequency shifting oscillator is incorporated.

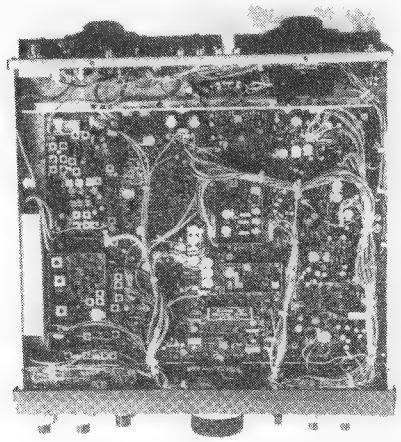
Full VOX facilities are provided, the controls being accessible under a panel on top of the transceiver, located alongside these are the memory backup batteries and the crystal calibrator. The VOX, with full or semi break facility may be selected from the front panel. The full break in VOX allows the transceiver to switch to receive between keyed characters. Reed relays are used in this circuit to provide smooth and quiet operation.

One of the best features of this new rig is the incorporation of an optional antenna tuning unit (ATU). The operation of this unit is automatic when the transceiver is placed in the TUNE mode and the transmitter is keyed. When switching bands the ATU will adjust itself so that a minimum amount of matching is required. The maximum matching time



SSB SLOPE TUNE (HIGH CUT, LSB) control

required when using a random length of wire was approximately 5 seconds. The ATU, when operating, seeks a point of acceptable SWR and upon nearing this point the tuning decreases in speed, stopping when a SWR of close to 1:1 is reached. When selected, the ATU is capable of handling mismatches of between 20-150 ohms. Outside this range, with the meter in SWR, a point of best match can be obtained by stopping the ATU manually.

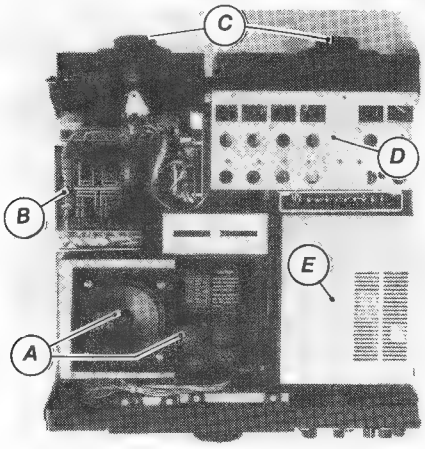


Underneath view of Transceiver.

Using the transceiver on the amateur bands was an enjoyable experience as all the controls are easily accessible, although it took some time to learn the panel layout as there are so many functions incorporated in the set. Fortunately, the ON/OFF switch is a large push button and easy to find.

Monitoring the transceivers operation is facilitated by a large "S" meter which in the transmit mode indicates either compression, ALC, power output, SWR and the output stages collector current and voltage.

The receiver is sensitive with a good immunity to overload, a three step attenuator, 10dB per step, can be switched on if distortion occurs. With the variety of "QRM removers" incorporated, it is doubtful if many other receivers would be able to reproduce as good a signal in adverse conditions.



Cover of transceiver removed showing (A) Speaker and VOX controls, (B) Transformer and Power Supply, (C) Fans, (D) PA and Final Filter, (E) ATU.

On transmit, various protection circuitry is provided for the output transistors. These are for SWR and heat protection. Two fans are included, one for each the regulated supply and output transistors. The transceiver will automatically shut down if the temperature of the output stage exceeds safe limits. It was found that only the power supply fan came on during SSB transmissions after a long QSO. However the output stage fan was induced to operate after a period of FSK operation.

BENCH TESTING

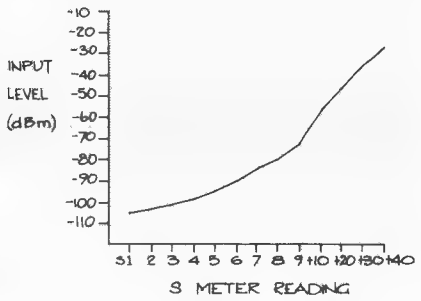
Having test equipment available, bench tests were carried out to determine some of the transceivers more important criteria. Only spot tests were conducted on various bands but these are indicative of the transceivers performance as a whole.

Test equipment at our disposal included a SIGNALOCK 925 RF Signal Generator, Digital Voltmeter, Power Meter and a Cantenna.

The first test conducted was for S+N/N Ratio, this was with a 1 μ-volt input signal and the receiver off zero beat to obtain a tone output. The receivers output was terminated into a 7.5 ohm load, the results were:
10 Metres-8dB S+N/N, 20 Metres-9dB S+N/N, and 40 Metres-9dB S+N/N.

The noise floor* of the receiver was claimed to be -140dBm (0.023 μV), this was not measurable with the equipment available, which only went to -120dBm (0.225 μV). (Figures in the dBm range are related to 0 dBm which is 1 mW or 0.225 volts across 50 ohms).

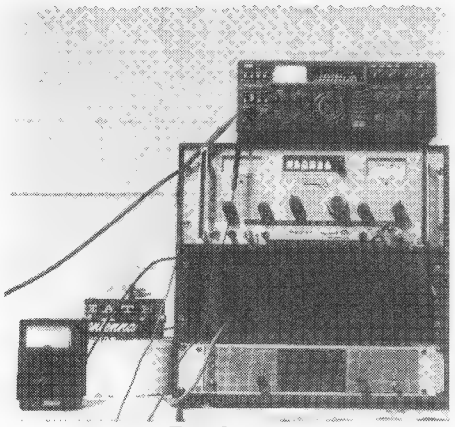
The "S" meter was checked next, full readings were not taken for every band the initial tests being done with a 28MHz input. Spot tests on other bands indicated there was little error between bands. S1 required an input of -105dBm (1.26 μV) while S9 was at -73dBm (50μV). A table of the relationships between S points is set out below.



The attenuator was also checked and proved to be accurate in its 10 dB steps. Next the output power was examined, this was only done on CW, there being no two tone test generator available for SSB. The tests were done both with and without the internal ATU and the results compared with the inbuilt meter. SWR indication was less than 1.005 on the internal SWR meter throughout the tests.

Band	Power with ATU	Without ATU
160	*	120
80	115	112.5
40	110	115
20	110	110
15	90	90
10	90	90

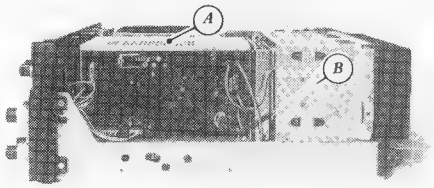
* ATU not operative on 160 m



Test Setup

The internal power meter was within 10% of these readings for each band.

The increase in noise floor with adjacent signals was next investigated. With an adjacent signal 3 kHz away at -50 dBm the increase was 40 dB while at 5 kHz it was 1 dB. These tests were on the 40 m band on LSB, on USB the 5 kHz figure was 4 dB.



Exposed view of side showing (A) ATU and (B) PA and Final Filter enclosure.

SUMMARY

The transceiver as a whole, is large and heavy. Its size is 374 mm x 141 mm x 350 mm and weighs 18.5 kg with ATU fitted. But it was never designed to be mobile. Inside this package you get just about everything you could want. Matching accessories that are available are a linear amplifier, station monitor, a choice of two pairs of headphones, base station microphone, phone patch unit and digital world clock.

Additional facilities that could have been included in the transceiver would have been an FM option and some form of scanning system for the memories.

Accessibility for servicing for all the units as seen from the photographs is quite good, but as with the main board, (Photo 6), you would have to be fairly certain what was wrong before pulling it out to make replacements. The transceiver comes with a twelve months warranty.

The review unit was supplied by the courtesy of Sandy Brucesmith, VK2AD, from Trio Kenwood (Australia) Pty Ltd through Eastern Communication Centre, Box Hill South, Victoria.

* Noise floor: This is the level required to produce a 3dB increase in output from 0 input. It indicates the minimum discernible signal which could be detected by the receiver.

JOIN A NEW MEMBER NOW

EVALUATION AND ON AIR TEST OF THE KENWOOD TS930 S

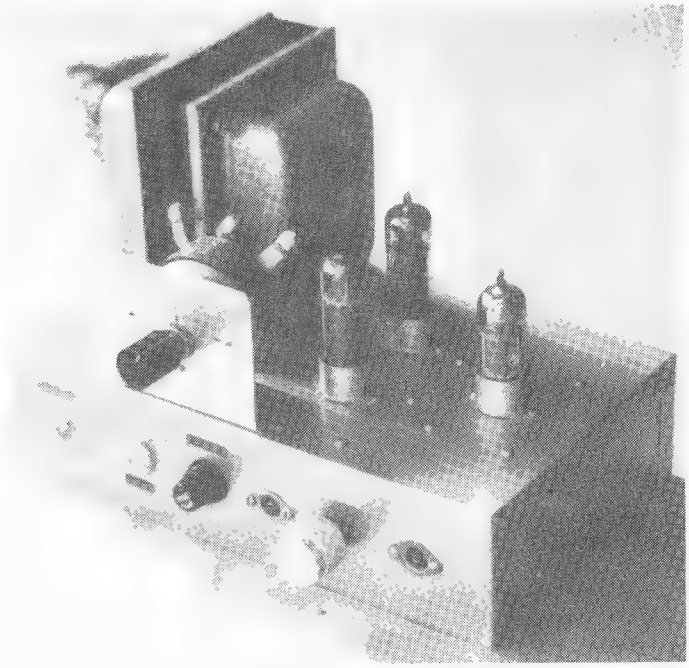
QUICK COMPARISON LIST:
KENWOOD TS 930S including Auto Tune facility fitted. Serial No. 2100216

CATEGORY	RATING	COMMENTS
APPEARANCE		
Packaging	★★★★	Transceiver plastic covered, held between foam inserts in a double carton.
Size	★★★	Large, as it includes ATU and PS.
Weight	★★	Heavy, as above.
External Finish	★★★★	Light grey with dark grey facia and white lettering.
Construction Quality	★★★★	Strong.
FRONT PANEL		
Location of Controls	★★★★	All easily accessible.
Size of knobs	★★★	No trouble actuating.
Labelling	★★★	Frequency select controls could have larger numerals. All others very good.
Meter	★★★★	Large size, clear with many indications available.
VFO Knob action	★★★★★	Large, good spin action.
Dial readout (Analogue)	★★★★	An advantage over just a digital dial.
Dial readout (Digital)	★★★★	Bright, large and clear.
REAR PANEL		
Sockets etc.	★★	All below heatsinks.
RECEIVER OPERATION		
VFO stability	★★★★	VNG did not vary.
Digital Dial	★★★★	Clean and accurate.
Analogue Dial	★★★★	Handy feature.
Memories	★★★★★	Very handy and effective with two recall modes.
Sensitivity	★★★★★	See text.
RF attenuator	★★★★	Three calibrated 10 dB steps.
RF gain	★★★	Smooth action.
Selectivity	★★★★★	With facilities available very good.
SSB Slope tune	★★★★★	Very good feature.
Notch	★★★★★	Effective.
Nar/Wide Control	★★★★	Good for CW reception.
Optional filters	★★★★★	Greatly increases CW capability.
Spurious resposes	★★★★★	None noticed.
"S" Meter	★★★★	See test.
AGC performance	★★★★	Three ranges plus off.
Signal handling	★★★★	Large dynamic range plus RF attenuator.
Status Indicators	★★★★★	Combination of LED's and red lettering on flourescent display.
RIT operation	★★★★★	Separate digital off-set indication. Photo chopper control.
NOISE BLANKER		
Line noise	★★★★	Effective for domestic noise suppression.
Auto ignition	★★★★	Effective.
"Woodpecker"	★★★	Separate blanker function for this "beastie".
Effect on signal	★★★★	When used with attenuator, no problems.
QUALITY OF RECEIVED AUDIO		
Internal speaker	★★	Mounted on top. An external speaker is a worthwhile investment.
External speaker		External speaker offered as an optional extra. Not available for test.
Headphones	★★★★★	Output level good. Used to monitor O/P.
Cooling fan noise	★★★★	Two fans fitted. Both quiet in operation.
TRANSMIT		
Operation CW output		See text.
Operation PEP output		N/A.
Audio response	★★★★	On air reports very good.
Compressor	★★★★	Compressor action is infinitely variable so clarity to talk power can be set to requirements
Audio sensitivity	★★★	Separate for normal or compressor.
ALC action	★★★★	Always clean.
Metering	★★★★★	Power, SWR, Ic, Vc, Comp., ALC, all accurate
Cooling	★★★★	See text.
Relay noise	★★★★★	Unobtrusive.
VOX operation	★★★★★	Controls under top panel. Smooth, set and forget

RATING CODE:
POOR★ SATISFACTORY ★★ GOOD ★★★ VERY GOOD ★★★★ EXCELLENT ★★★★★

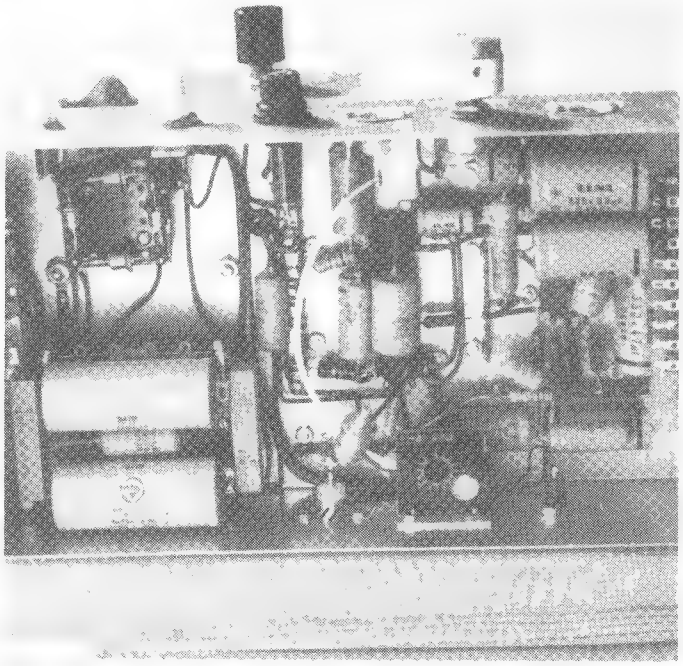
A Complete ATV Transmitter

N. Cooper
5 Cahill Street, Strathpine 4500 Qld

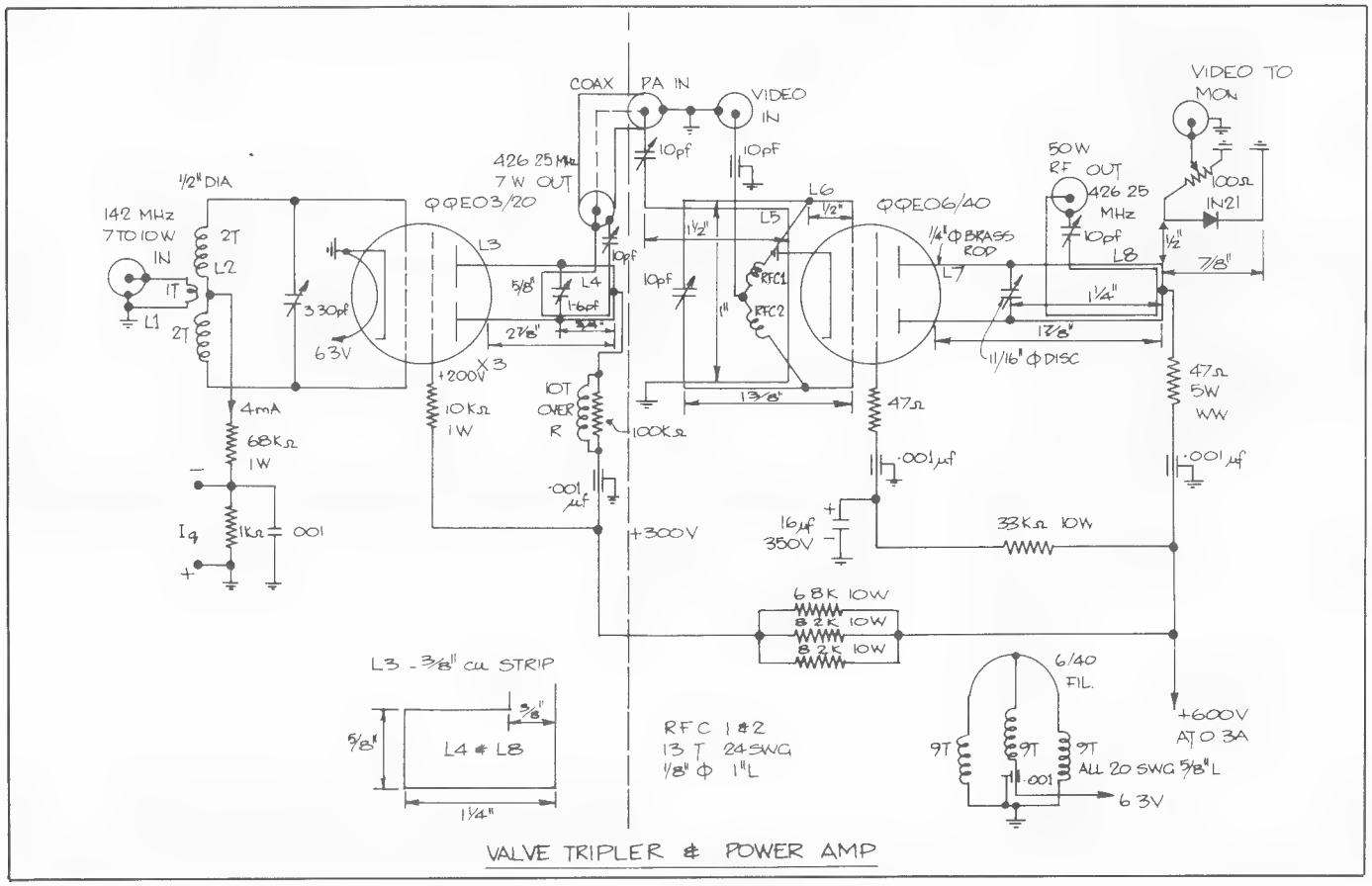


ATV is growing in popularity and amateurs in all States are now transmitting in full colour. This article may help to stimulate even more interest in amateur television.

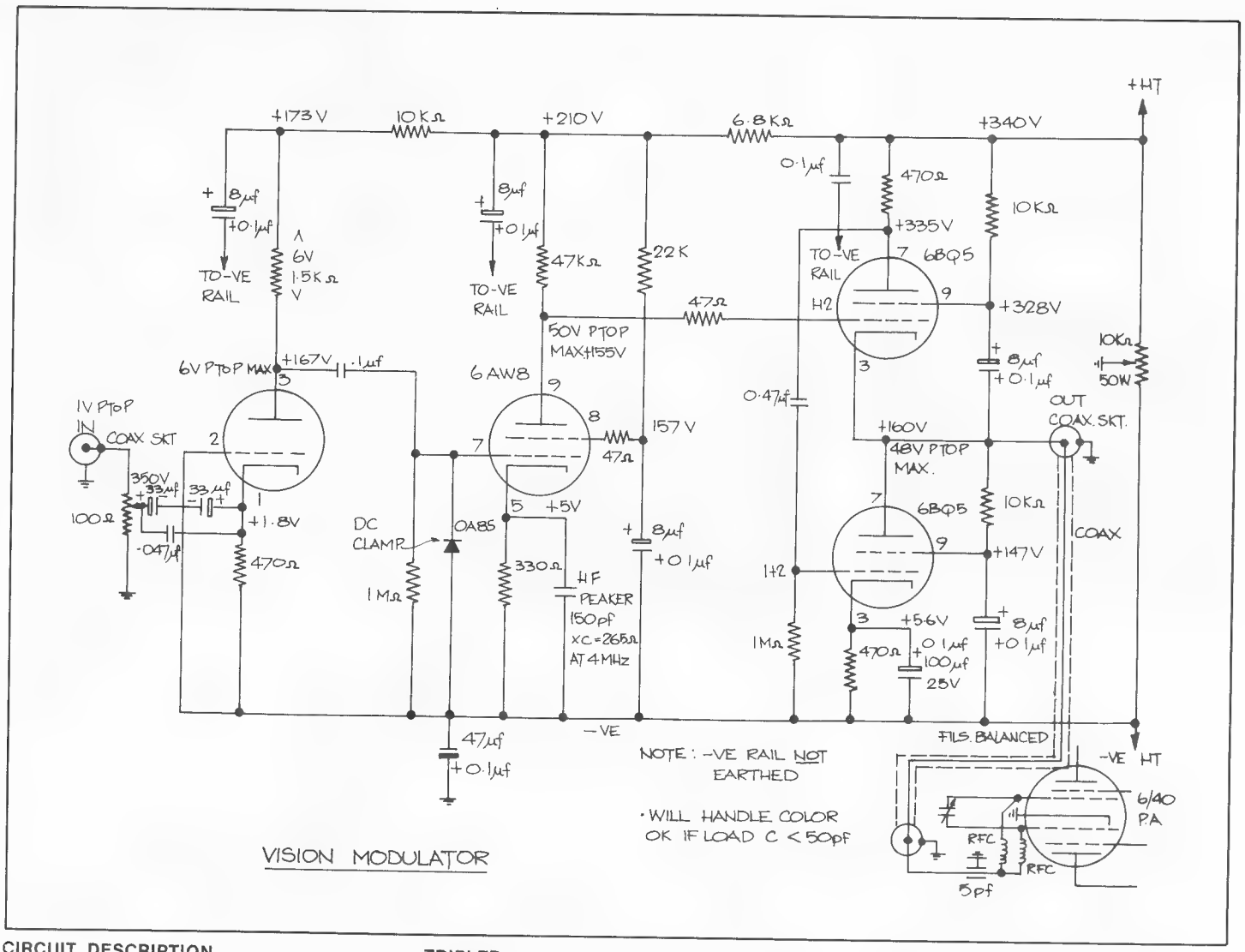
I started in ATV many years ago with a black and white camera, an old



MR10 carphone driving a 3/20 tripler, and 6/40 power amplifier. The 6/40 was high level grid modulated by a valve modulator. The valve final and modulator will appear at the end of this article as an alternative output arrangement.



VALVE TRIPLER & POWER AMP



CIRCUIT DESCRIPTION

In my design I've started at a lower frequency (35 MHz) with a very popular overtone crystal circuit where the crystal operates in its series mode, and thus gives good stability. L1 adjusts the frequency of operation. Q1's collector is tuned to the second harmonic (71.041 MHz) and is then coupled via a second tuned circuit to the base of Q2. The double tuned circuit provides better rejection of unwanted spurious signals. Impedance matching into the base of Q2 is accomplished by a capacitive tap across L3. Q2 is also a X2 mutiplier, taking the 71 MHz up to 142.083 MHz in its collector circuit. Double tuned circuits are again used, and a capacitive tap provides matching into Q3's base. Q3 is a straight through amplifier which provides sufficient drive for Q4. The capacitive tap across L6 is, this time, made adjustable with the two trimmers thus allowing the optimum values to be found. Q2 and Q3 have some bias added to improve power gain, and so require less drive for a given output. Q4 is the power amp stage taking the output up to about 300 to 400 mW. This stage has been double tuned in its collector circuit to again improve spectral purity. A low impedance link provides a 50W output.

TRIPLER

The 300 mW or so of power at 142 MHz is tripled to the final frequency with Q5, which should run about 60 per cent efficient. This tripler has an idler circuit (L2 + C3) which improves efficiency. The idler being tuned to the second harmonic. Output from the tripler was measured at 250 mW.

POWER AMPLIFIER

The transistorised 426.25 MHz power amplifer I used was commercial and obtained from Germany in kit form. There are several good power amplifiers available so I'll leave that part up to the constructor. The 250 mW from the tripler should drive most of these available PAs to 10 or more watts output. This unit runs in class "C".

MODULATOR AND SOUND UNITS

The VK3ATY modulator and sound board was used, but some changes were made to the sound unit. The oscillator coil is wound on a 5 mm Neosid former and filled with 36 s.w.g. The capacitors across the coil remain as 220 pF and 150 pF. The 220 pF in series with the sound carrier level pot is lowered to 22 pF and the pot changed to 5k. These changes were necessary to reduce the level of sound carrier injection into the modulator. The video modulation should be applied to both the driver and the PA stage on the RF power amp. board. Minimum bypass capacitors should be used in the collector circuits so as not to shunt the higher video frequencies.

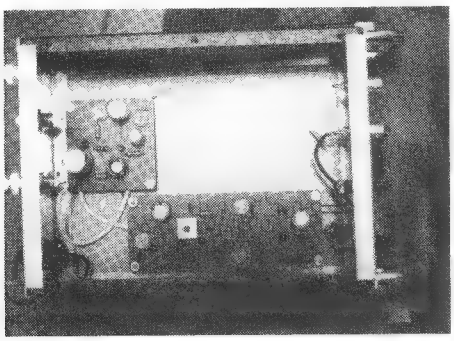
THE VALVE TRIPLER AND FINAL

As an alternative arrangement, after the 300 mW exciter board, an 8W transistor power amplifier can be added operating on 142.083 MHz. This is a standard class "C" power amplifier circuit using two power transistors and requires little explanation. This supplies the grid driving power for the 3/20 tripler and should produce about 4 mA grid current. The anode lines are ¼ λ long and the output power should be about 5 to 7 watts with the voltages shown. The power amplifier (QQEO 6/40) uses half-wave grid lines, and quarter-wave anode lines, and should give about 45 watts output with 600V on the anodes. Both valves should have a small fan blowing on them when in use. The 6/40 operates in class "C".

THE VALVE TYPE GRID MODULATOR

This unit grid modulates the 6/40 valve, and has two voltage amplifiers which drive the shunt regulated cathode follower output stage. This stage has no voltage gain

and provides a very low output impedance to cater for the capacitive loading of the 6/40 grid circuit. Note the very low values of anode load resistors in the two voltage amp. stages. This gives little gain but a very high F2 point. Note also that both the negative and the positive rails are NOT earthed, and that the 10k 50W pot provides a means of making the output of the modulator either negative (which is required for the 6/40 grid bias), or positive with respect to earth.. Both this modulator and the transistorised one will handle colour OK.



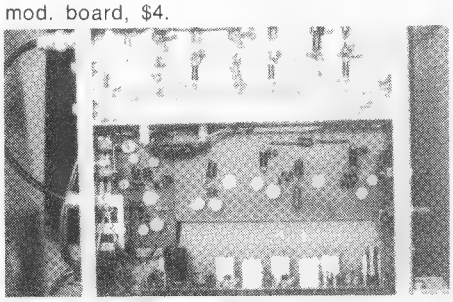
ALIGNMENT

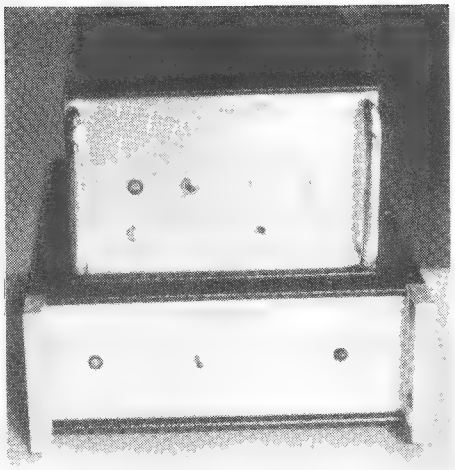
I won't go into details of how this should be done, as the constructor should be experienced enough to work that out for himself. I do suggest the use of a wavemeter or analyser in tuning the exciter and tripler up.

CONCLUSION

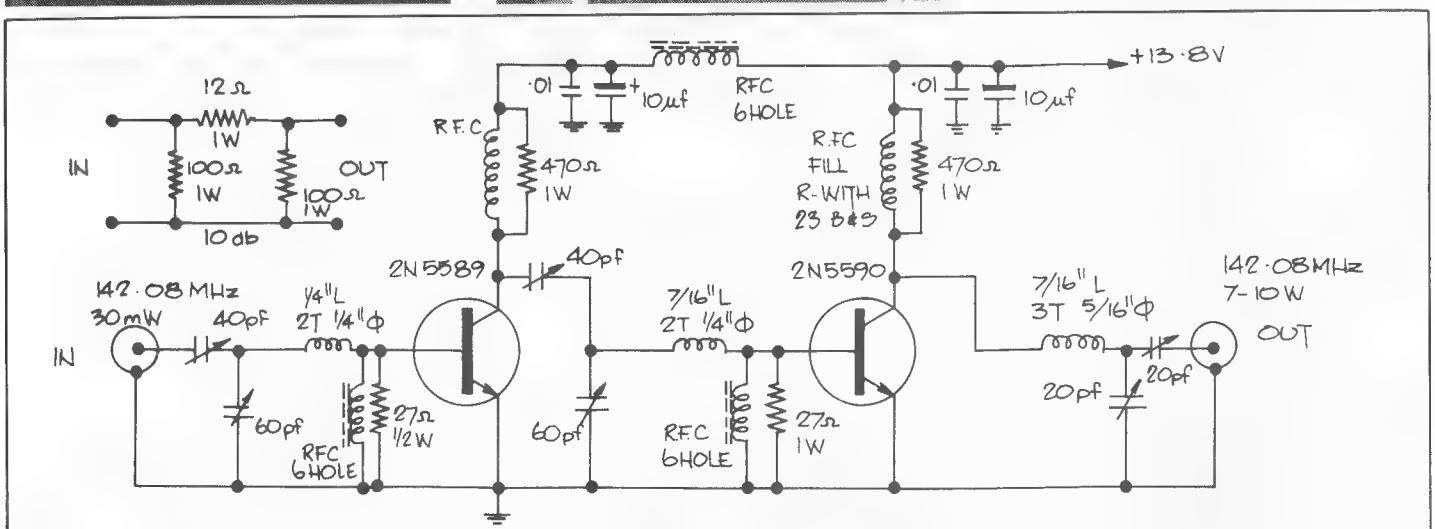
I owe thanks to Peter VK4ZWP for providing assistance in the design of the exciter and tripler boards. I will provide PCBs only, and for three months ONLY, after this article is published.

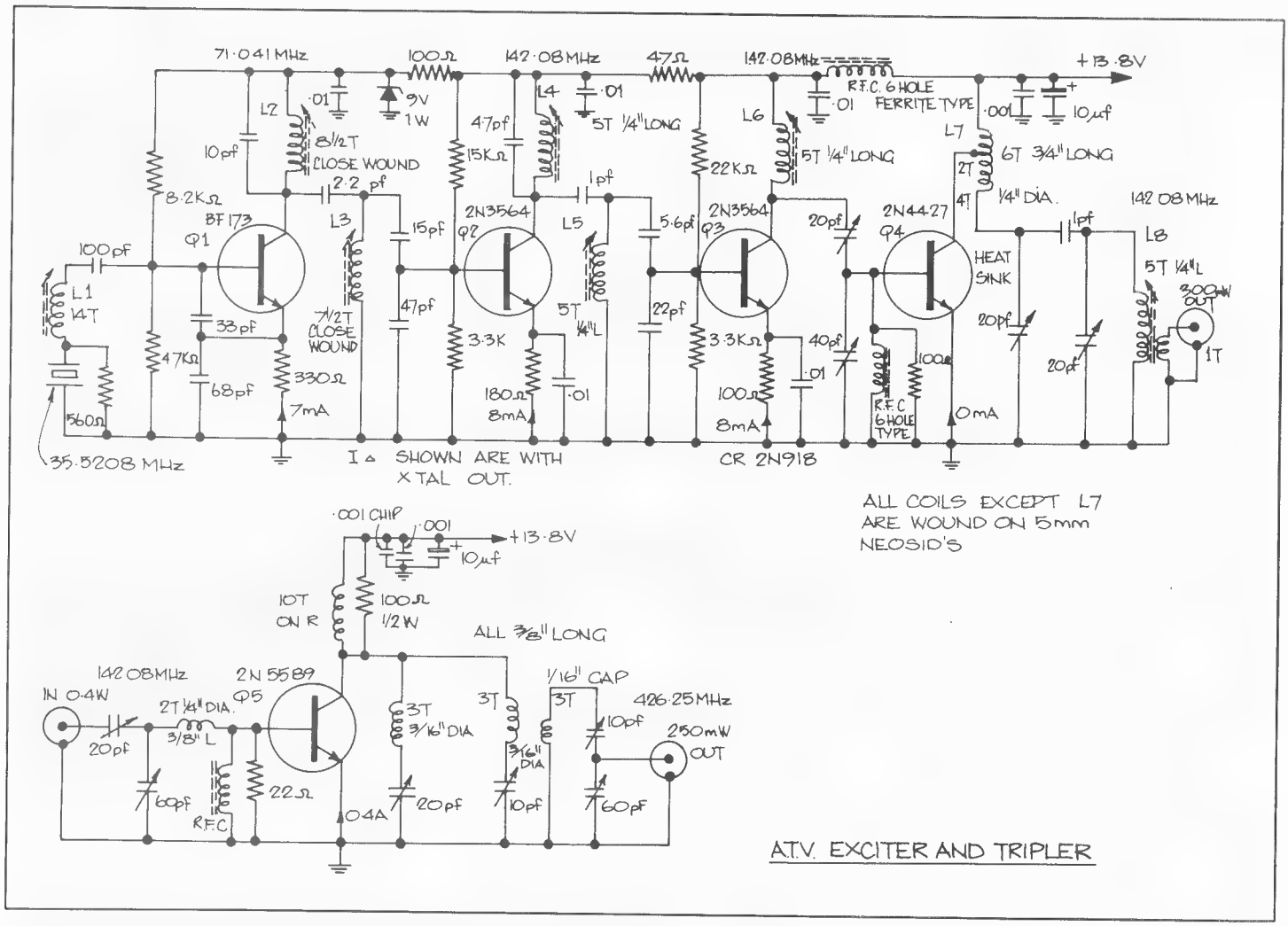
Exciter board, $8; tripler, $4; 142 MHz power amp., $8; sound board, $8; vision mod. board, $4.





EDITOR'S NOTE: Care should be taken with the power supply in the vision modulator as both the negative and positive voltage rails must be isolated from earth. A design is not included so normal designs (with negative tied to earth) could not be used without modification. ■





Ten Commandments of Electronic Safety

An oldie from about 1965

1. Beware of the lightning that lurks in an undischarged capacitor lest it cause thee to be bounded upon thy backside in a most ungentlemanly manner.
2. Cause thou the switch that supplies large quantities of juice to be open and tagged, so that thy days may be long on earth.
3. Prove to thyself that all circuits that radiate and upon which thou workest are grounded, lest they lift thee into a high frequency potential and causeth thee to radiate also.
4. Take care that thou useth the proper method when thou takest the measure of high voltage, that it not incinerate both thee and the meter for verily, though thou hast no account number and can't easily be replaced, the meter doth have such and shall bring great woe upon the supply department.
5. Tarry amongst those who engage in international shocks, for they are surely non-believers and not long for this world.
6. Take care thou tamper not with interlocks and safety devices, for this shall incur the wrath of thy seniors, and unleash the fury of the safety officer down upon thy head and shoulders.
7. Work not with energised equipment for if thou doest thy buddies will surely be buying beers without thee, and thy space at the bar will be filled by another.
8. Verily, verily, I say unto thee: never service high voltage equipment alone; for electric shocking is a slothful process, and thou mightest sizzle in thine own fat for hours before thy Maker seeth fit to end thy misery, and draw thee unto His fold.
9. Trifle not with radioactive tubes and substances, lest thou commence to glow in the darkness like a lightning bug.
10. Commit thou to memory the work of the prophets, which are writing the Instruction Books; they give thee straight dope and steer thee away from error.

from "ARNS Bulletin", Sept. '81

Famous Amateur — Now Inactive

Bill Martin VK2EBM

33 Somerville Road, Hornsby Heights, NSW 2077

With great regret we announce the inactivity of one of amateur radio's most valuable amateurs.

Mr. Someone Else has closed down. The vacancy he has left will be hard to fill. Mr. Else has been an active amateur for many years. He did more than his fair share of work insofar as the hobby was concerned. Whenever there was a WICEN job to do, an Intruder to report, a working bee, or a Club activity, his name was on everyone's list.

"LET SOMEONE ELSE DO IT."

Whenever a Club or Divisional project was mentioned, this man was looked to for inspiration, as well as results.

Mr. Someone Else was a wonderful man, but he was only human.

He could spread himself only so far. He did the best he could, but people expected too much from him.

Mr. Someone Else has gone; he left a good example, but who will follow it? Who is going to do the things that Mr. Someone Else did? ■

WICEN NEWS

WICEN Use of Amateur Frequencies

R. G. Henderson VK1RH
171 Kingsford Smith Drive, Melba, ACT 2615

I recently heard of some on-air unpleasantness arising from a lack of understanding of the use of amateur frequencies by WICEN operators, coupled with a less than courteous explanation.

Unlike some nations, the Australian amateur supports self regulation; as a consequence the regulatory authority, the Department of Communications, has not been requested to specify fixed frequency allocations, rather the amateurs themselves have democratically prepared and agreed band plans. One part of this is the oft heard (but not always respected) gentleman's agreement.

A consequence of the above is there are no dedicated WICEN frequencies, not any need seen for any except in emergency or disaster operations. And in these circumstances the authorised emergency network operations are accorded a clear frequency by regulation (see Amateur Operators' Handbook, paragraph 6.32).

There are dedicated emergency communications frequencies both internationally and Australia-wide. The coastal radio shipping stations, aeronautical mobile service and SES frequencies spring to mind as examples. Remember too, ITU Resolution 640 "Relating to the international use of radio communications, in the event of natural disasters, in frequency bands allocated to the amateur service".

HF

WICEN has, through the WIA policy generating process, nominated specific calling frequencies in the HF bands. These are:—

3.600, 7.050, 14.100, 21.190, 28.450 MHz. Secondary frequencies are +25 kHz for SSB, —25 kHz for CW.

Having established communications, nets may QSY to a clear frequency, and because of long standing interference (often from intruders) some Divisional networks may operate on slightly different frequencies from the above on a routine basis, Nevertheless the calling frequency is a starting point to listen for or on which to initiate an emergency call.

A bad practice, which has been observed from time to time, is for a well meaning but misguided operator to camp on the calling frequency and adopt a policeman-like attitude to keep it clear despite the fact that WICEN has not been activated and no traffic is being passed.

VHF

The frequency situation differs a little on VHF; there are nominated WICEN channels but not all crystal locked equipment is set up for them so by default the common user channels are often employed. Some Divisions also have WICEN repeaters but it is not uncommon for the local repeater to be employed. In an activation situation this is no problem, remember Regulation 6.32, but for training exercises it calls for tolerance and mutual acceptance by WICEN and local operator alike. Few exercises are so busy as to demand the exclusive use of a repeater for very long periods. Remember that good repeater operating procedure directs that you leave a break to allow stations with urgent messages to break into the network. Also simplex operation is preferable where possible.

BAND SHARING

In "training exercise situations" frequency sharing may be necessary, particularly on VHF, with WICEN messages interleaved with other routine amateur communications. The key to good operating is courtesy, tolerance and consideration on both sides. A short identified request along the lines of, "Gulargambone WICEN is conducting a training exercise in support of the local SES, a clear channel would be appreciated, this is VK——", should be adequate to inform amateurs on the air of the activity. Spot frequency policemen are NOT wanted, but on the other side a responsible adult response is expected.

Should you be offended on-air by a WICEN exercise activity don't bottle it up, or become an alligator (all mouth and no ears) and whinge on-air to all about it; take it up with the Divisional WICEN coordinator or Divisional Council, but make your complaint in a factual manner to facilitate investigations.

Remember that there are many facets to the hobby of amateur radio, WICEN is but one of them. Keep it a happy sport. ■

A Communications Package — Orange Style

The long weekend in June 1982 saw the Orange Amateur Radio Club supply a communications package (safety and scoring) for the Orange Sports Motorcycle Club. This was the fifth year that the Club had provided communications for the annual two-day motorcycle trial, an event of national significance. This trial is one that is used to determine which riders will represent Australia at overseas meetings.

Personnel came from the amateur ranks as well as from the Mitchell Division of the State Emergency Services. The task was to man each checkpoint (14) and the special tests (3) on each of two days and radio back the rider's number and time to a safety computer at communications headquarters. The scoring information was then to be sent to race headquarters for entry into the scoring computer.

Provision had been made for 256 riders in the safety computer system, so the 170 riders that took part were well within the system capacity. As well, the two clerks of the course required constant mobile communications back to both headquarters.

WICEN COMMUNICATIONS

CHECKPOINT NUMBER	MESSAGE NUMBER

SENT TO_____TIME_____

SENT BY_____FREQ/MODE_____

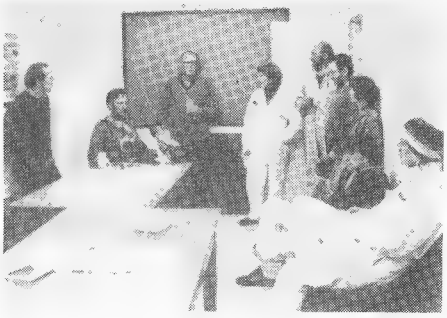
LOCATION_____

FIG. 1: Special message form

A special message form was printed (Fig. 1). This was filled in by the checkpoint captain and handed to the radio operator for transmission. A maximum of ten riders can be shown on each form and it is considered, from past experience, to be a reasonable length of message. Each year 3,000 forms are used. This year a different course was used each day, which involved much rapid movement of equipment on the Saturday night.

For the Saturday a field headquarters was set up on Mt. Towac, which is near Mt. Canobolas, but far enough away not to interfere with the repeater and other commercial users.

Two VHF frequencies were used, one amateur and the other SES, one HF (SES) and a UHF link for use back to race headquarters. Two caravans were used, one for

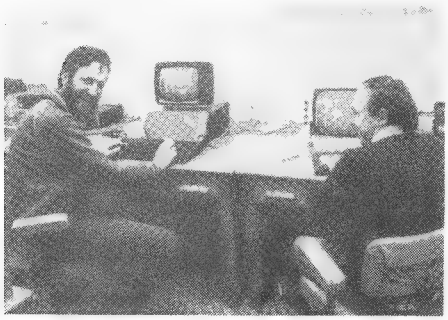


The de-briefing

radio operators and the other for the safety and communications computer. Power was obtained from an SES 3.7 kW trailer/generator. On the Sunday the same frequencies were used but operations were from the SES headquarters with the UHF data link to race headquarters.

At Orange SES Headquarters — Robyn (SES), Jan (Orange RC) and Peter VK2TK

Race headquarters is unsuitable for a communications headquarters due to ignition interference from the motorcycles, particularly during the start and finish. With bikes starting at the rate of four per minute interference can be expected over a long period. On both days the clerks of the course used "Fred", the Orange repeater, for linking back to both headquarters.



Kim VK2ASY and Ian VK2NYU operating the VDUs

This year the information was fed into the safety computer (2 x 2650) through two memory mapped VDUs (2650s). The VDUs had a replica of the message form on the screen and the operators filled in the information as received and used full edit facilities for correcting any errors. The next 2650 maintained and updated a file on each rider so that the rider's location and time of entry into a section could be recalled immediately. Also the total number of riders in any section could be found. These items were necessary for the smooth running of the event as well as keeping track of stragglers. The "raw" information (checkpoint, rider and time) was then passed to the fourth 2650 as a storage buffer before being sent as RTTY on the UHF link. This data was hard copied at race headquarters. Any requests for rider information such as location, etc., was sent automatically, in turn, to race headquarters over the same system.

The organisation was again this year carried out by Kim Stevens VK2ASY and Wally Watkins VK2DEW. Kim was responsible for the software and hardware of the computer system, while Wally looked after the logistics of liaison, personnel, equipment and the thousand and one other necessary matters.

As is the case, usually due to inclement weather, the course was not finalised until three hours before the starting time, so a very flexible approach was maintained. The usual teething troubles surfaced, but very soon traffic was flowing in the usual efficient manner.

Amateurs are normally used at the field stations and SES personnel operate at headquarters. This year, as there were plenty of people available, some checkpoints had two operators (amateur and SES), which made things easier, especially when the checkpoint was being used more than once.

Kim VK2ASY checking data output

The "software" for the input VDUs was considered to be foolproof! During the weekend it was put to the ultimate test, as some of the keyboard operators were inexperienced. After only five minutes tuition they were able to handle the data entry and edit facilities with ease.

In all, an average of 28 people were used each day for the communications package which, in itself, is one of the main events of the year for amateurs around the Orange area. Planning is already under way for next year. Direct linking with the scoring computer (Apple) is contemplated in order to save double entry.

Wally Watkins VK2DEW. ■

BUYING OR SELLING — CHECK **HAMADS** FIRST!

Spare a Thought

from "Propagator", March '82

I have held an Amateur Licence now for approximately four years and have been a member of the Committee of the Illawarra Amateur Radio Society for 3 of those 4 years. On a number of occasions I have taken to an internal discourse about what the functions of a radio society or Club is or should be. For the record I have set out below my own thoughts on this. The reasons for doing this are manyfold, but I guess the main reasons are:—

a) Maybe you have never even asked yourself why you joined a radio club. (It's a question worth asking.)

b) Maybe you could get more out of your membership.

c) Maybe the club could gain something in this process.

d) Maybe my own analysis could be wrong (if you don't agree — let the Editor know — in a letter, not by a brick through his front window).

1. A Radio Club or Society should be a source of both fellowship and a means of encouraging growth (both to individual amateur and to the fraternity of amateurs. Those aims should include:
2. Effective leadership which should include all sections of the society membership.
3. Participation by as many members as possible in the Society's activities.
4. Good Public Relations both in terms of positive action to promote Amateur Radio and in countering poor reporting when it appears in the local press.
5. An on-going programme of training of members by means of Nets, technical discussions and guest lecturers at Society meetings.
6. An on-going programme of recruitment of new amateurs and of sponsoring training/education programmes and licencing classes.
7. Close co-operation with emergency communications organisations, e.g., WICEN, SES, Volunteer Coast Guard, etc.
8. Sponsorship of Technical and Working Groups in technical activities.
9. Training in self-regulation of the service, e.g., fox hunts, direction finding groups.

In summary, this is your radio club. Are you getting what you thought you would get? What did you expect? What can the Club do to meet your expectations? What can you do to help?

— Denis VK2DMR

St. Paul Island DX-pedition

Jack Williams VK3LG
3 St. Johns Wood Road, Mount Waverley 3149

A DXpedition to St. Paul Island was mounted from 8th July to 13th July, 1981. The party consisted of Pete Anderson VE1BL and Jim Dean VE3IQ/1 and operations took place on all bands using Pete's call VE1BL/1.

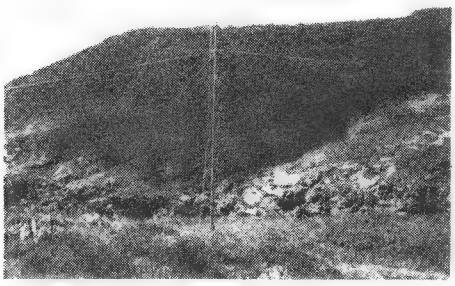
Pete VE1BL/1

St. Paul Island is situated off the east coast of Canada at 47° 13 mins. 35 seconds north and 60° 08 mins. 26 seconds west and appproximately 1½ hours flying time by helicopter from Sydney in Nova Scotia. Sydney is a further two hours from Halifax.

TRANSPORTATION

Two flights from the mainland were necessary to move the equipment and provisions required for the five days planned operation.

Pete and Jim, together with most of the equipment, arrived on the first flight at 1100 hours local time. The helicopter returned to the mainland for the remainder of the provisions, including fuel for the generators and drinking water, then returned to the island at 1700 hours, after having been delayed for several hours by gale force winds and fog.

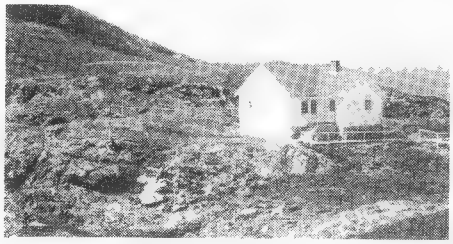


Tri-Band Beam

INSTALLATION

Work proceeded during the remainder of the first day to establish the base in a disused house, and install antennas and equipment.

The antennas consisted of a triband beam for 10, 16 and 20 metres and dipoles for 40, 80 and 160 metres. The 40 and 80 metre dipoles were not very high and were attached to a disused workshop whilst the 160 metre antenna was attached to and near the top of the lighthouse.



The shack and beam (Note: the rocky terrain)

FIRST QSOs

The following morning the first contacts of the DXpedition were made with VK3LG and VK3DFD at 0926Z on 9th July, and this was followed by a total of 3,700 contacts on all bands.

The team operated for approximately 22 hours each day using two rigs with the station coming up on the Caribbean net and Round Table each day.

CONDITIONS

Weather during the period was cold, windy and generally unpleasant, and band conditions left something to be desired.

Jim VE3IQ/1

Fifteen and 20 metres were very good, but only one opening of the 10 metre band occurred during the four days of operation.

The 160, 80 and 40 metre bands were generally noisy and not up to expectations, although 40 metres did improve at times.

MORALE BOOSTER

Jim tells a tale of Pete keeping up his morale by constantly drinking a mixture of a half cup of tea, quarter cup of Rum, one teaspoonful of honey and one teaspoonful of sugar. Never heard of that one before, but it could be good.

The party returned to Halifax during the morning of 13th July.

All participants of the Caribbean net thank Pete and Jim for mounting the DX-pedition and especially for coming up on the net each day of their stay. St. Paul Island was a new contact for most.

All those who required confirmation should have this by now, with special thanks to QSL Manager Joe Arcure W3HNK for his promptness and efficiency in managing the QSL situation. ■

St. Paul Island as seen from the air. The shack building is on the right.

COMPETITION No 3

Answer this Problem to win a Fluke 8022B Digital Multimeter

Due to the overwhelming response to the previous competitions, the Publications Committee, with the assistance of Elmeasco Instruments Pty. Ltd., have decided to conduct another competition.

The magnificent prize for this competition is a FLUKE 8022B Digital Multimeter, which would be an adjunct to any experimenter's test equipment. This Digital Multimeter retails at $190.35, including sales tax, and it has been kindly donated by the Australian Distributors of FLUKE products, Elmeasco Instruments Pty. Ltd.

This instrument has been reviewed by Ron VK3AFW, Technical Editor of AR, and to read of the rigorous tests that the test unit has been subjected to and the reviewer's comments turn to page 26 of this issue.

RULES

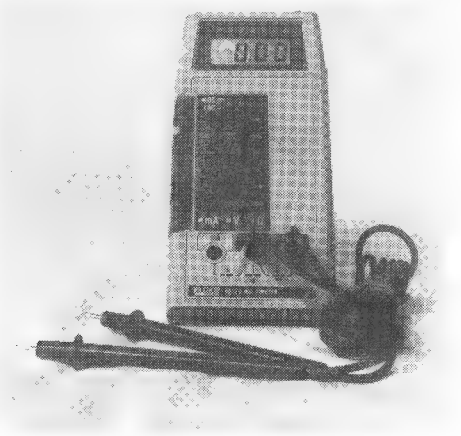
The contest is open to all financial members of the WIA with the exception of all people and their immediate families associated with the production of Amateur Radio and employees of Elmeasco Instruments Pty. Ltd. ONE entry per member (all multiple entries will be disqualified prior to drawing), each entry to be handwritten on the back of a standard Australia Post small envelope.

Entries must be received no later than the last mail, 1st October, 1982, and the winning entry will be the first entry with the correct answer drawn by the Victorian Manager of Elmeasco Instruments Pty. Ltd., Maurice Johnson VK3ADJ, on the 4th October.

The Editor's decision will be final and no correspondence will be entered into regarding the competition. The winner and the correct answer will be published in November AR.

All entries to: AR Competition No. 3, Box 150, Toorak, Victoria 3142. On the back of the envelope your name, address, call sign and the answer to the problem.

Only entries in the above format will be accepted. All others will be disqualified.



It is appropriate to consider a practical problem related to electrical measurement. Fig. 1 shows a single stage class A transistor amplifier. The transistor T has a Vbe of 0.600V and the base current Ib is 1/100 of the emitter current Ie.

We want to measure the voltage between the base of T and ground by connecting a voltmeter across R2. As the resistance values are given we can calculate the anticipated voltmeter reading of the voltmeter characteristics are known.

Q.1: If the voltmeter has a 20k ohm per volt sensitivity and is used on the 10 volt range, what will the voltmeter read?

Q.2: If a Digital Multimeter with a 10M ohm input resistance is used instead what would the meter read?

Assume both meters to be without calibration error and round your calculated answer to the nearest three decimal places.

The problem, which is one of calculating voltmeter loading, has one complication. But then it is a magnificent prize worth a little effort. ■

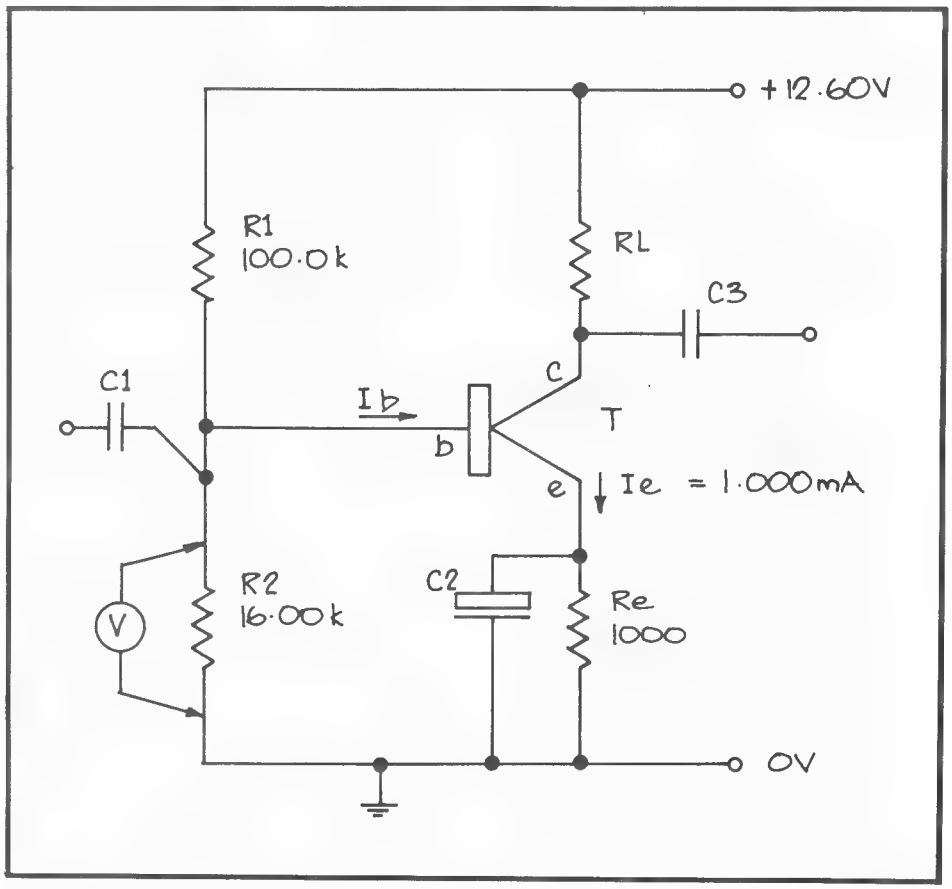
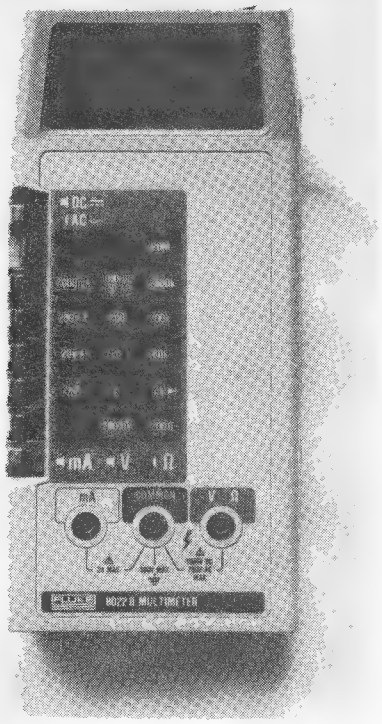


FIG. 1: Circuit of a simple amplifier
Vbe = 0.600V
Ib = Ie/100

TEST REVIEW EQUIPMENT



The Fluke 8022B Digital Multimeter

By Ron Cook VK3AFW
Technical Editor

Why review a digital multimeter? The most common test instrument in any radio enthusiast's "shack" is a multimeter! Traditionally a moving coil instrument with a sensitivity of 20,000 ohms per volt has been sought preferably with the capability to measure DC and AC volts, DC current and resistance. Digital instruments are now well within the reach of the hobbyist so it is reasonable to look at an example made by the world's largest manufacturer of digital multimeters. The John Fluke Manfacturing Company, founded of course by John Fluke, produce an extensive range of digital readout test equipment. Their hand-held 8020 series of digital multimeters (DMMs) is so popular that there are (at last count) 25 other companies producing imitations. Obviously Fluke have something going for them.

APPEARANCE

The 8022B is built into a tough plastic case that fits neatly into the hand. The 3½ digit display is clear and large enough to be read right across the room. (Try that with a conventional analogue meter.) The functions are selected by two push button switches, six other buttons give range selection.

On the back are four non-skid rubber feet and a tilt bail with locking detent. Change-over between volts/ohms and mA is effected by placing the "hot" lead in the appropriate socket.

The display is tilted and is easily read when the meter is lying flat, although the display is readable over a wide range of viewing angles the slight tilt ensures a crisp readout.

Overall the appearance is that of a modern attractive and functional DMM.

SPECIFICATION

The 8022B is the most inexpensive of the 8020 range and consequently has a lesser performance than the top-of-the-range 8024B. Nevertheless the specification is better than claimed by most of the imitations. Part of the specification is reproduced here.

8022B SPECIFICATIONS

The following specifications assume a 2-year calibration cycle and an operating temperature of 18°C to 28°C (64°F to 82°F) at a relative humidity up to 90%, unless otherwise noted.

FUNCTONS DC Volts, AC Volts, DC Current, Resistance

DC VOLTS

Range	Resolution	Accuracy for 2 Years
±200 mV	100 uV	
±2V	1 mV	
±20V	10 mV	±(.25% of reading + 1 digit)
±200V	100 mV	
±1000V	1V	

Overvoltage Protection	1000V DC or peak AC on all ranges
Input Impedance	10 MΩ, all ranges
Normal Mode Rejection Ratio	>60 dB at 50 Hz and 60 Hz
Common Mode Rejection Ratio (1kΩ unbalance)	>100 dB at DC, 50 Hz and 60 Hz

PRINCIPLES OF OPERATION

All the parameters measured are analogue so the heart of the instrument is the analogue-to-digital (A/D) converter. The well established dual-slope integration technique is used. In brief, the voltage to be measured charges a capacitor via a resistor for a fixed period of time. Then a reference voltage of opposite polarity is applied to discharge the capacitor to zero. If the discharge time is equal to the charging time then the unknown voltage is equal to the internal reference. A greater time represents a greater voltage, and so on.

In this instrument the timing is derived from a quartz crystal oscillator to ensure accuracy. The actual operation is more complex than outlined of course. For example, in each measurement cycle there is an automatic zeroing phase to overcome any offset drift in the A/D.

Voltage range change is accomplished by changing taps on a precise resistive divider of 10 M ohms resistance. For current measurement the voltage across a small value resistor is measured.

In the ohms mode the instrument compares the volt drop across an internal resistor with that of the unknown. That is, a two wire technique is used, so for low resistances the connecting lead resistance must be allowed for. Three ranges (2k, 200k and 20 M ohms) have a high enough voltage to turn on a silicon junction. The other 3 ranges (200, 20k, 2000k ohm) have a voltage too low to turn on a silicon junction. This allows diodes and transistors to be tested and resistances in parallel with diodes to be measured all by selecting the appropriate range.

AC operation is achieved by converting AC voltages to DC by means of a precision rectifier in which an operational amplifier is used with diodes to provide the equiva-

AC VOLTS

Range	Resolution	Accuracy — 45 Hz to 450 Hz
200 mV	100 uV	
2V	1 mV	
20V	10 mV	±(1% of reading + 3 digits)
200V	0.1V	
750V	1V	

Overload Protection ..... 750V rms or 1000V peak continuous, except 200 mV AC ranges (15 seconds maximum above 300V rms AC)

Common Mode Noise Rejection Ratio (1 kΩ unbalance) . >60 dB at 50 Hz and 60 Hz

Volt-Hz Product ... . 10^7 > max. (200V @ 50 kHz)

Input Impedance . . . . . 10 MΩ in parallel with <100 pF

DC CURRENT

Range	Resolution	Accuracy for 2 Years	Burden Voltage
2 mA	1 uA		0.25V rms
20 mA	10 uA	±(.75% of reading + 1 digit)	max.
200 mA	100 uA		
2000 mA	1 mA		0.9V rms max.

Overload Protection 2A/250V fuse, in series with a 3A/600V fuse

RESISTANCE

Range	Resolution	Accuracy for 2 Years	Full-Scale Voltage	Maximum Test Current
200Ω	0.1Ω	±(0.3% of reading + 3 digits)	<0.25V	.35 mA
2 kΩ	1Ω		>1.0V	1.1 mA
20 kΩ	10Ω	±(0.2% of reading + 1 digit)	<0.25V	13 uA
200 kΩ	100Ω		>0.7V	13 uA
2000 kΩ	1 kΩ	±(2% of reading + 1 digit)	<0.25V	0.13 uA
20 MΩ	10 kΩ		>0.7V	0.13 uA

8022B SPECIFICATIONS (cont.)

Overload Protection . 500V DC/AC rms on all ranges. 15 seconds max. above 300 volts.

Open Circuit Voltage Less than 1.5V on all ranges except 2 kΩ range is less than 3.5V.

Diode Test . . 2 kΩ, 200 kΩ, and 20 MΩ ranges supply enough voltage to turn on junctions allowing a "Diode Test". 200 Ω, 20 kΩ, and 2000 kΩ ranges can make in-circuit measurements without turning on silicon junctions.

AC CURRENT

Range	Resolution	Accuracy for 2 Years 45 Hz to 450 Hz	Burden Voltage
2 mA	1 uA	±3% of reading + 3 digits	0.25V rms
20 mA	10 uA		max.
200 mA	100 uA	±2% of reading + 2 digits	0.9V rms
2000 mA	1 mA		max.

Overload Protection .. 2A/250V fuse, in series with a 3A/600V fuse.

ENVIRONMENTAL

Temperature 0°C to 50°C (32°F to 122°F) operating. —35°C to +60°C (—31°F to 140°F) storage.

Relative Humidity 0 to 80%, 0°C to 35°C (32-95°F) on 2 MΩ and 20 MΩ ranges. 0-90%, 0-35° (32-95°F) on all other ranges. 0 to 70%, 35-50°C (95-122°F).

Temperature Coefficient <0.1 times the applicable accuracy specification per °C for 0-18°C and 28-50°C (32-64.4°F and 82.4-122°F).

lent of a diode without forward voltage drop and negligible linearity error. The instrument is average reading and scaled to read RMS for sine wave input.

ON THE TEST BENCH

DC VOLTAGE

Ninety-five DV voltages in the range 1 mV to ± 1 kV were applied. The results were excellent.

Applying nominal voltages produced a reading of that voltage, e.g. —1.999V in gave —1.999V indicated, or within one least significant digit, e.g. 1.800V in gave 1.801V indicated, an error of 0.05 per cent.

After a little thinking and experimentation, a reading of 10.01 was obtained for an input of 10.003V, an error of 0.07 per cent. Admittedly, these tests were carried out in a temperature controlled laboratory, but as the maker specifies 0.25 per cent of reading plus 1 digit uncertainty, the measured error of only 1 digit was amazing, particularly as it was present only on positive voltages. The linearity could not be faulted.

DC CURRENT

Nine test currents were used and the errors here were less than 0.3 per cent. (3 digits or less) except for the higher ranges, where the errors observed were 0.4 per cent, again much less than specified by the maker.

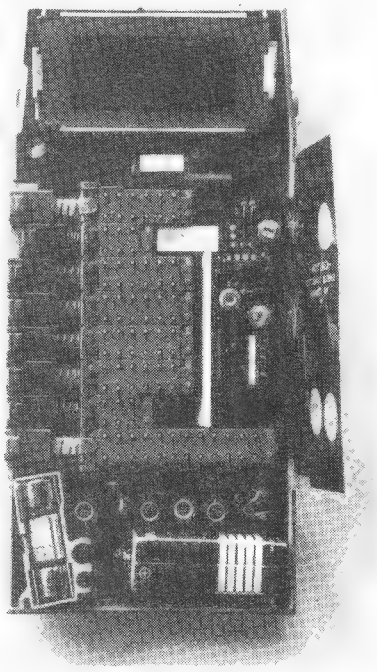
RESISTANCE

A six dial decade resistance box and a range of standard resistors were used to measure the performance in the range 0.01 ohm to 11 M ohm at 29 points on the range. No error exceeding 1 digit was observed.

The open circuit voltages were all less than the maximum specified.

AC VOLTAGE

Fifty-one 50 Hz voltages ranging from 1 mV to 500V were applied. The linearity



Interior of the Fluke 8022B

GENERAL

Protection Class 2	Relates solely to insulation or grounding properties defined in IEC 348.
Maximum Common Mode Voltage	500V DC/rms AC.
BATTERY LIFE	Single 9V battery.
Alkaline	200 hours typical.
Zinc Carbon	100 hours typical.
BATTERY INDICATOR	"BT" on display illuminates when approximately 20% of battery life remains.
Display	3½ digit LCD (2,000 count), autozero, autopolarity.
Size	L x W x H: 18.0 cm x 8.6 cm x 4.5 cm (7.1 in. x 3.4 in. x 1.8 in.)
Weight	0.37 kg (13 oz.)

was tested on the 0.2V, 2V and 20V ranges. In all cases it was better than 1 digit. The maximum error found was 0.2 per cent (2 to 4 digits). Obviously the rectifier system works very well.

AC CURRENT

Only a few test currents at 50 Hz were applied; because of test equipment availability the test currents were uncertain to 1½ per cent. All indications were within this range.

The DMM tested performed well within the maker's specification.

There is probably little difference between the different models except for the extra functions and AC network compensation to give wider AC frequency response. Perhaps some selection of components is made. It seems that many of the 8022B DMMs will be within 0.1 per cent under normal conditions even though this is much better than the maker's claims. Alternatively the instrument can be expected to maintain accuracy beyond the two years specified. Calibration is quite simple should it be required. (For best accuracy periodic checks should be made at intervals not exceeding two years. For moving pointer instruments the same applies, if they are not used daily. In this case six monthly tests would be advisable. This DMM is likely to meet its specification much longer than a conventional instrument even though its accuracy may be 20 times tighter than the conventional PMM instrument.)

PROTECTION

Protection on current ranges is by back-to-back diodes across the current input terminals, together with a 2A glass cartridge fuse and a 3A sand-filled fuse. The 3A sand-filled fuse is used as a back-up to protect the printed circuit tracks on the meter if the 2A fuse "tracks" and maintains an arc under violent rupturing conditions.

On the voltage ranges three varistors rated at 430V ± 10 per cent are connected in series across the voltage input terminals, together with a fusible resistor. Should the input voltage rating of the meter be exceeded the varistors will snap over drawing sufficient current from the source to blow the fusible resistor.

The plastic case and recessed terminals protect the operator from electric shock. The instrument is safe to use as a hand-held device up to 500V DC/RMS AC between common and ground and/or 1 kV DC between common and high on the highest voltage ranges.

ACCESSORIES

The DMM is supplied in an expanded foam container, complete with a calibration certificate, comprehensive instruction manual and two test leads.

A wide range of accessories is available. These include:—

Carry case.
Temperature probes (—50°C to +150°C).
Current transformers (0-600A rms).
High voltage probes (0-40 kV, 0-60 kV).
High frequency probes (0.25-30V, useful up to 250 MHz or 700 MHz.
Battery eliminator.
AC/DC current probe (20/200A AC or DC).
Alternative test leads.

CONCLUSION

The Fluke 8022B DMM is an attractive high performance instrument. The maker is justly proud of this product — a two-year warranty is given. For your money you get:—

- A 3½ digit 6 function DMM with high contrast LCD display (no more bent needles, no parallax).
- Full auto-polarity operation.
- Overload indication and protection.
- Dual slope integration for accuracy even when noise and mains hum is present.
- Light weight (369g/13oz.), tough, quality construction.
- Low consumption (200 hours from 9V alkaline battery).
- Wide range of accessories.
- Guaranteed accuracy for two years.

What's wrong with it you may ask? Well, as with all instruments of its class there is a penalty to pay for current measurement. The meter has a volt drop of 0.25V (max.) for currents up to 200 mA, but this can rise to 0.9V at 2A. Such a volt drop can give problems in some cases.

If you are in the market for a meter, give this one consideration.

The test instrument, which was selected at random from stock, was kindly supplied by Mr. M. Johnson of Elmeasco Instruments, whose offices are listed below:—

SYDNEY
PO Box 30, Concord, NSW 2137.
Telephone: (02) 736 2888. Cable: Calequip, Sydney. Telex: 25887.

MELBOURNE
PO Box 107, Mt. Waverley, Vic. 3149.
Telephone: (03) 233 4044. Cable: Calequip, Melbourne. Telex: 36206.

BRISBANE
GPO Box 2360, Brisbane, Qld. 4001.
Telephone: (07) 229 3161.

ADELAIDE
GPO Box 1240, Adelaide, SA 5001.
Telephone: (08) 271 1839.

PERTH
PO Box 95, Gosnells, WA 6110.
Telephone: (09) 398 3362. ■

QSP

BE PREPARED

October comes around every year, and every year we team up with the Scouting Movement around the world to bring Scouts, Cubs and Guides together in the Jamboree on the Air.

We all pat ourselves on the back and think how generous we are to provide such a service and rightly so. It is a very worthwhile weekend and truly reflects the amateur spirit.

How many of us stop to think about the phrase that is synonymous with Scouting—BE PREPARED? How prepared are we? We need to be well briefed in a number of aspects of amateur radio. Can you advise a non-member about how to join the Institute? Do you know what to do when an irate neighbour knocks on your door and yells "TVI"? Do you know your rights in this respect? Someone comes to you and asks about becoming an amateur, what do you tell him or her? These are only a few of the questions.

The ultimate test is the emergency. Emergencies have a habit of giving little or no warning. Can your station continue to operate without that vital 240 volt mains supply? Do you have any idea of how WICEN operates? Are you familiar with WICEN procedures? Who do you contact on receipt of emergency traffic?

Finally, if you get tangled up in a high voltage supply or with the mains, do members of your family know how to save your life?

Be a good Scout and be prepared! ■

—Editorial in QTC June 1982
(VK4 Division AR insert).

RAST — สมาคมนักวิทยุสมัครเล่นแห่งประเทศไทย
RADIO AMATEUR SOCIETY OF THAILAND
P.O. Box 2008, Bangkok, Thailand.

SEANET CONVENTION

The 1982 12th Seanet Convention from 12th to 14th November will be hosted by the Radio Amateur Society of Thailand (RAST) and will be held at the Imperial Hotel, Bangkok. Because of customs and import licensing RAST warns visitors not to bring any amateur radio equipment with them. If you plan to attend the Convention (and maybe stay over for a week or so for the Loy Krathong Festival and the Elephant Round-up) write to the Secretary, RAST, Box 2008, Bangkok. ■

"VACUUM TUBES"

A short note in April 1982 QST bemoans the unseating (or unsocketing) of tubes by semi-conductors and that RCA will be discontinuing the manufacture of 2E26, 5563A, 828, 813, 7094, 810, 2X2A, 2E29, 811A, 829B, 6293 and, of all things, the illustrious 807. ■

"Youth in the Electronic Age" 4th World-Wide Photo and Drawing Competition

1. PURPOSE

Youth—the engineers, scientists, managers and users in the telecommunication world of tomorrow — will again have a role to play in TELECOM 83 (Geneva, 26th October-1st November, 1983) through the 4th World-wide Photo and Drawing Competition "Youth in the Electronic Age".

The contest is for young people from 8 to 18 years of age in the 155 Member countries of the ITU to help them learn about:

— the intensive and ever-growing use of telecommunications in the world today;

— the role of such techniques in economic and social development;

— career opportunities in telecommunications.

2. CONDITIONS

The competition is open to young people who will have reached the age of 8 years by 1st January, 1982, and who will not yet have reached the age of 18 by that date.

3. CATEGORIES

Entrants will be divided into three age-groups:—

Group A: 8 to 12 years.

Group B: 13 to 15 years.

Group C: 16 to 18 years.

4. THEME

The general theme of the competition will be:—

"Telecommunications for everyone."

Photographs, drawings, paintings and illustrations should develop the theme and show how young people imagine the role telecommunications play in making today's world shrink, what their effect will be on the family, on mass communications, on economic and social development of nations and on fostering understanding among peoples of the world.

5. MEDIA TO BE USED

Photographs, drawings, paintings or other illustrations (such as collages), excluding written texts.

6. INFORMATION ABOUT TELECOMMUNICATIONS

During the preparation of TELECOM 83, which has already started, information on this world-wide exhibition, as well as on the ITU and its activities, will be dsseminated. Such documentation may be requested by participants from the ITU through the authority organizing the competition in the country concerned. This information may help young people to find ideas for photographs and drawings.

7. SELECTION OF ENTRIES

A national jury will have to be appointed in each country participating in the competition to select the 10 best entries in each age-group.

8. DATE FOR SUBMISSION OF ENTRIES SELECTED ON THE NATIONAL LEVEL

The entries selected must be sent by the national authority, before 31st May, 1983, to:—

International Telecommunication Union
"Youth in the Electronic Age 83" Competition
Public Relations Division
Place des Nations
CH-1211 Geneva 20 (Switzerland)

9. JURY

An international jury will be set up in Geneva, consisting of specialists in youth affairs, teachers, artists, diplomats and telecommunication experts.

10. PRIZES

The list of prizes will be published in Geneva, on 17th May, 1983, the 15th **World Telecommunication Day.**

11. ANNOUNCEMENT OF RESULTS

Results will be announced during the 4th World Telecommunication Exhibition, TELECOM 83 (Geneva, 26th October-1st November, 1983).

Entries submitted to the ITU will remain the property of the latter.

TELECOMMUNICATIONS AND INTERNATIONAL CO-OPERATION

As one of the highlights of World Communications Year, the 1983 "Youth in the Electronic Age" competition is intended to stimulate the interest and participation of young people in the Year and in the development possibilities open to them in the expanding field of communications technology.

The theme of the competition is "Telecommunications for Everyone". Youth world-wide will have the opportunity to imagine and depict graphically, in drawings or photos, what "Telecommunications for Everyone" might mean for themselves and their respective countries. Directing the imagination of youth towards the possibilities and benefits of communications is an important step towards the development of future generations of scientists, engineers, managers, producers and consumers.

The 4th "Youth in the Electronic Age" competition was launched on the occasion of the 14th World Telecommunication Day, 17th May, 1982. The past three "Youth" competitions (in 1971, 1975 and 1979) witnessed steadily increasing participation of young people in the 157 Member countries of the ITU. In 1979, 19 countries sponsored national contests, and out of some 200,000 entries, national juries selected 368 works for submission to the international jury.

Seventeen countries have already recognized the importance of the competition and have begun organizing it nationally. Their national juries will screen entries to be submitted to the international jury, which will meet in Geneva in September 1983. The countries which have already begun preparations are: Bahamas, Barbados, Canada, the Federal Republic of Germany, Fiji, Indonesia, Iran, Jamaica, Japan, Madagascar, Peru, Sri Lanka, Sweden, Tanzania, Thailand, Trinidad and Tobago, and Zimbabwe.

The entries considered by the international jury will be exhibited and awarded prizes during TELECOM 83, 4th World Telecommunication Exhibition, to be held in Geneva from 26th October to 1st November, 1983.

Important dates for the "Youth in the Electronic Age 83" competition are:—

17th May, 1983: Announcement of prizes to be awarded.

31st May, 1983: Closing date for receipt of entries from national juries.

26th October to 1st November, 1983: Exhibition of entries at TELECOM 83.

29th October, 1983: Prize-giving ceremony.

The general regulations giving complete details of the competition are listed above. The address of the national authority coordinating the competition in ITU Member countries may be obtained by writing to:—

International Telecommunication Union
"Youth in the Electronic Age 83" Competition
Public Relations Division
Place des Nations
CH-1211 Geneva 20 (Switzerland) ■

QSP

PAGING SYSTEM

The ITU Telecommunications Journal for April 1982 contains a news item that a single individual can now be paged within a radius of from 1,000 to 2,000 km from a long wave transmitter HBG in Switzerland. This is known as VIP-LINE and a subscriber carries with him a special pocket-size receiver which is in fact a high precision clock capable of distinguishing the one call meant for it from all the other HBG outputs. Special batteries give a life of over 10 years so as to provide visual and aural signals. ■

HOW'S DX

Ken J. McLachlan VK3AH
PO Box 39, Mooroolbark 3138

With magnetic disturbances and solar flares that were felt across the universe and in some instances making communication virtually impossible we have probably the worst conditions upon us for many a year. These disturbances, according to media reports, were "the worst for six years (some reports said twenty-six) and the area of the sun's surface producing the solar flares was 1,400 times the size of Australia — and is the largest since 1957".

This is consistent with listening reports received covering the early to late part of June period and if a contact was made, dropout could and did occur over a matter of seconds.

Probably, with the solar cycle on the downward trend and propagation the way it is, it may be the proper time for us all to reflect on our operating skills. Personal opinion is that whether it be in VK or any other country, the modern operator has lost the art of calling CQ, particularly on a seemingly dead band. Calling CQ on a "dead" 10 and 15 metre band has netted many enjoyable QSOs and invariably many a new country on those particular bands at this QTH.

The modern operator, when he or she does call CQ DX, tends to give long drawn out calls without a pause, and any interested listening DX operator gives up at not being able to return the call, now knowing the band is open he listens elsewhere or moves off and calls CQ himself. Ten to 15 second calls are more effective, with a five second listening break, repeated over a couple of minutes, then one drawn out call of the same duration.

When a station calls CQ DX that is what he or she generally means, not to have that rare country swamped by his friendly neighbour calling in to tell him that the temperature is below zero and he should be in bed. If he had called CQ, then he is fair game for a local contact.

Another observation from this QTH is that many operators from VK are reluctant to mention Australia in connection with their call sign. I use it and have found it as an advantage because a lot of DX stations do want to work VK and will give them a go against many other countries, particularly in a pile-up.

For an adventurous and positive approach that will create greater efficiency and give more QSOs per hour spent at the transceiver, listen often, if the band is quiet call CQ DX with frequent listening periods and don't be frightened to call CQ DX, CQ DX, AUSTRALIA VK . . . CALLING AND LISTENING. It is an effective way to make new friends, work new countries and fill the log.

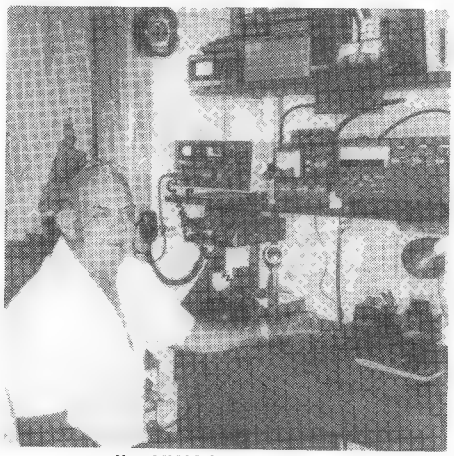
ALBANIA

Maybe the breakthrough all DX orientated amateurs have been waiting for, particularly those wanting it for a new country.

Contacts from EA advise that operations will be permitted on both CW and SSB, this is probably due to the tests carried out a couple of months ago between ZA and EA on 80 metres which were regarded highly by the authorities. Unconfirmed reports also indicate that a DL could become active in the near future. Investigations of all "dog piles" and anyone signing /ZA would be definitely worth a call

LARGE TOWER

Received a postcard from a constant contributor to AR and this column, ardent DXer and globe trotter Jim VK3DFD, and XYL Anne from Paris. Front of the card bears a stunning picture of the Eiffel Tower and the story line on the back is that Jim is working on how to convert it to a "tilt-over" type for amateur use. Jim, no more troubles with bent towers (refer page 8 April AR) with such a construction, but how do you get it past Customs?



Jim VK3DFD on the air

WILLIS ISLAND

New operator Andy VK9ZA took over from Tony VK9ZH at the end of June. Tony, during his absence, won a new IC22S in a raffle conducted by the VK6 Tic Hill Repeater Group and it will be used well if the in excess of 10,000 QSOs in six months on Willis is any yardstick.

Gill VK6YL advises that the backlog of Bureau cards has been caught up with for VK9ZG since receiving the logs from the former Manager.

Tony VK9ZA has appointed VK6YL as his QSL Manager. Gill, you will just have to buy your "POSTIE" a big Christmas present for carrying all that mail to your door each day.

VU IMPORTS

It is now permissible for amateurs in India to individually import up to ten thousand rupees of equipment annually (approximately A$1,000). Although there have been many representations made over the years, it is believed that the assistance given by amateurs during a recent dam burst, in which many people lost their lives, was the deciding factor with the authorities. This now puts the amateur on an equal footing with scientists and professionals, as the latter have been allowed import privileges for a considerable period.

SEA NET

The Annual South-East Asia Net Convention will be held this year in Bangkok on the weekend of the 13th/14th of November. SEA Net is a long standing net that can be heard at 1200 UTC daily on 14.320 MHz. Many famous DXers, including Father Moran 9N1MM and OM Tim BV2A, attend from time to time. Unfortunately, Kam HS1WR, one of the original members and a famous DXer and exponent of our hobby, will be sadly missed due to his untimely death recently.

BY AGAIN

Three or four CW operators (including one YL, Jiao) are mainly working Europeans on CW, however the word is that it will not be too long before they will be using sideband. Their QSLing is second to none in efficiency and promptness in returns, also contrary to rumours IRCs ARE negotiable in China. QSL information as per JULY AR.

The first VK amateur to meet the officials of the China Radio Sports Association would be Kerry VK2BXT, who did so whilst on a holiday tour through the country. Kerry had the pleasure of meeting and talking at length with Cheng Ping, Secretary-General of the CRSA, the Vice Secretary-General Wang Sun, and Tong Xiaoyung, who is responsible for BY1PK's operation and the training of several thousand radio enthusiasts in Peking. On previous occasions these Officers of CRSA have enjoyed the company of amateurs from both Japan and America.

PACIFIC DX

The SM0AGD's Pacific jaunt is going according to schedule. Calls to T30, T2, FW8, A35, ZL and VK are on the itinerary for the rest of this year, with hopes of VK9 Willis, VK9 Mellish, H44, C21 and even an attempt to put Spratly on the air before returning home in mid-1983. Included in their equipment is a TR7 and Linear. Antennas are a Triband beam and a vertical for the lower bands.

QSLs go to J. Svensson SM3CXS, Berghemsvagen 11, S-863 00 SUNDSBRUK, SWEDEN, and a separate envelope is requested for EACH operation NOT each QSO as some Managers demand.

Heard Island Update

FACTS

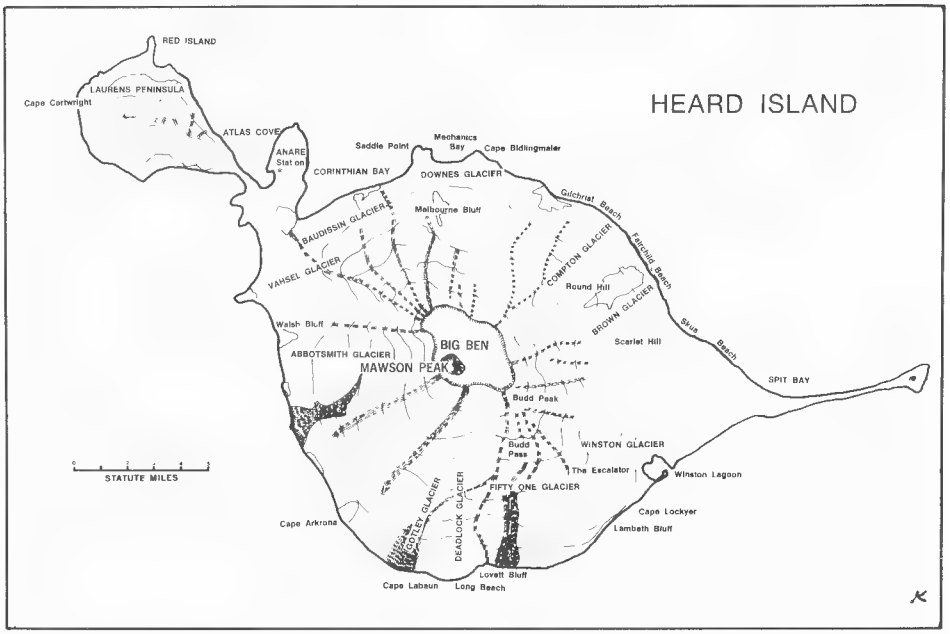
- ★ **HEARD ISLAND EXPEDITIONS has been registered by the Corporate Affairs Commission in NSW.**
- ★ **PROFESSIONAL ACCOUNTING and LEGAL EXPERTISE has been engaged.**
- ★ **SPONSORSHIP: Excellent pledges by major DX Foundations has been forthcoming.**
- ★ **BACKING by the WIA Executive in their willingness to accept bulked donations for distribution.**
- ★ **THREE OPERATORS have been selected.**
- ★ **VK0HI, CW and MD call signs have been reserved.**
- ★ **ANACONDA II — A 10% deposit has been lodged on the charter of the vessel, for an estimated departure in January, 1983.**
- ★ **MUCH MORE VK funding and participation is required to allow HEARD to be HEARD.**
- ★ **PARTICIPATE NOW, this is a VK PROJECT that will be recognised WORLD WIDE.**

Is it **FACT** or **FANTASY?** Which do I believe? Quite a problem for anyone, let alone an amateur who has numerous frequencies at his or her disposal to monitor, plus the whisperings of the well meaning DXer passing the "latest" on to his newfound friend or to the regular weekend "sched". Only the individual person can do this. However, this column has and is correlated on factual information. All Heard Island happenings are communicated and verified by written documentation. Written offers have been made to others who have been making overtures about expeditions, though no correspondence has been forthcoming.

The VK6 DX CHASERS' CLUB (VK6-DXCC) have supplied all correspondence that has transpired to this QTH since the inception of the idea and the salient points have and will be passed on. A licence, VK0HI, has been reserved by DOC for Dave VK3DHF, ex VK9ZD, and the Federal Minister for Science and Technology has advised that "there is no objection to the expedition proceeding, provided due standards of safety and environmental protection are observed". Further extracts of the letter which are pertinent include "The Government is anxious to ensure that, because of the severe climatic and ocean conditions likely to be encountered and because of the fragile and unspoilt nature of the Island's ecosystems, any expedition should be adequately manned and equipped and should take the necessary environmental precautions. Groups should be capable of dealing with emergencies themselves, and should not depend on obtaining assistance from the Government."

Formal landing approval will be forthcoming when charter, personnel and other relevant details are finalised, including the details of safety precautions and medical care arrangements that have been made.

As mentioned in previous updates, the VK6-DXCC has sought out and joined forces with a Mountaineering and Photographic Group who will assist in sharing the financial burden of such a venture, of



which the budget is in excess of A$130,000 for the 12 man group. A large proportion of this expenditure is in vessel charter and fuel for 12 weeks made up of a travelling period of three weeks each way and the balance in laying offshore or sheltering at Kerguelen Island, some 200 nautical miles distant.

It is envisaged that an expedition base, including the radio party, will set up camp at Atlas Cove at or near the site of the old ANARE station. While the base camp is being established, a small group comprised of scientists and photographers will make a series of landings on adjacent MacDonald, Flat and Shag Islands (on which no previous landings have been made).

The landing at Atlas Cove and the other islands will be most treacherous owing to the high seas and heavy gusty winds that prevail in the area, although it is hoped to alleviate considerable problems by using inflatable rubber boats to transport personnel, supplies and equipment from the expedition yacht. The Surf Life Saving Association of Australia is rendering valuable assistance with regards to advice on this problem.

The yacht will endeavour to land a second party in the area of Spit Bay. This party will establish a base camp, which will be in continuous radio contact with the amateurs working out of Atlas Cove, from here the mountaineers, supported by scientists and photographers, will attempt the ascent to Big Ben. The envisaged route will be via the Stephenson Glacier, Long Ridge, the Summit Plateau and Mawson Peak.

From Big Ben, the party will return to Atlas Cove to rejoin the radio group in preparation for departure back to the mainland.

DATA

The accompanying table indicates some of the problems facing the expedition. The information reproduced has been gathered from meteorological data that was taken between 1948-54 and for one month in 1963.

All future updates on Heard Island in this column, due to my commitments, will be written by Nick VK6XI. Nick is liaisoning with all facets of the operation on behalf of the VK6-DXCC and the radio group.

CONDITION	JAN.	FEB	MARCH	
CLOUD COVER	8/8	8/8	8/8	
MEAN DAILY SUNSHINE	1.7	1.6	3.2	HRS
HIGHEST TEMPERATURE	12.8	14.4	13.3	°C
LOWEST TEMPERATURE	—1.1	—1.1	—1.7	°C
GROUND TEMPERATURE	—0.4	—1.1	—0.4	°C
WIND GUSTS (HIGHEST)	85	85	90	KNOTS
AVERAGE WIND SPEED	25.5	25.9	27	km/h
CLEAR DAYS	0	1*	0	
RAINFALL	159.2	184.2	167.7	mm

*ONE CLEAR DAY IN ALL THE OBSERVATIONS TAKEN.

PROFILE OF JIM Z21BP

Jim was born in the town of Dalmuir, Scotland, one mile from Clydebank, where he attended high school. Jim left Clydebank high when he was fifteen to embark upon a motor trade.

His first position was in a service station during which time he taught himself to drive, having recently celebrated his 50 years of driving anniversary during which time he has driven everything from a lawn mower to heavy earth moving equipment (and probably driven everyone else crazy) and clocked up well over a million miles on the road.

Jim moved to Rhodesia (now Zimbabwe) in 1949 to work for the Government. Firstly working with heavy earth moving equipment then later to the Police workshops doing maintenance and repair work and also vehicle inspections.

Next stop for Jim was to the Postal Service, where he stayed until he retired. With the Postal Department Jim's work involved looking after six 500 watt motorcycle portable generators to supply standby power to stations throughout the whole country. By the time Jim left the department each station had at least a 3.5 KVA automatic mains fail unit and some even had a 12 or 25 KVA unit, whilst Salisbury boasted 220 KVA straight eight Rolls Royce diesels.

Jim's travelling to service these units caused him to sleep in the vehicle on many occasions and imagine his surprise one morning when he looked out to see evidence that a pride of lions had left their visiting card, and whilst driving on yet another occasion he had to apply the brakes in a hurry or else he was on a collision course with six elephants slowly crossing in front of him. (He felt they were too large to argue with as to who had right-of-way.)

Jim retired for three years with his feet up, but decided the leisurely life was not for him and for the past nine years he has been working with ZE1BJ in the radio and mechanical stores with the Army.

Jim became interested in radio in 1926, when he dabbled with crystal sets and cats whiskers, setting a pair of headphones in a kitchen bowl to get more "noise" so more than one person could hear.

For many years, due to pressure of work, Jim allowed his interest in radio to slip, but in 1960, in Rhodesia, he started operating (and having a lot of fun) with a 38 set and an HRO using dipoles. Next he upgraded to a Panda Explorer and an AR88D and became engrossed in DX operation, attaining his DXCC on this ancient set of equipment. Also about this time Jim became intrigued in experimenting with antennas and has had great success with l/wires, dipoles of various types, quads of different types on HF and VHF, various yagis, inverted Vees, you name it, he has tried it.

Present equipment is a FTDX 150 and a FTDX 250 from Sommerkamp. With the 150 he uses a home-brew 813 passive grid linear. The current antenna is a Swiss quad, which is mounted atop a "home-brew" 50 foot by 9 inch triangular lattice mast made up of five 10 foot sections bolted together. In the centre is a 2 inch dural pipe extending 20 feet out the top on which all the antennas are mounted. The turning mechanism is a chain sprocket driven by a chain drive from a "hand wheel" inside the shack.

Jim has achieved 51 awards in 12 years and there are still more to come, so he is fast running out of space in the shack to display them all.

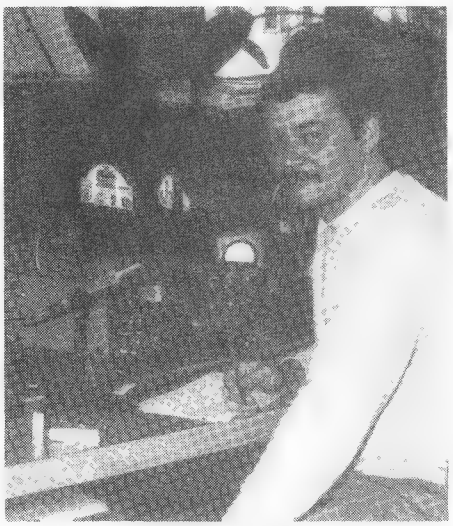
Anyone wishing to meet Z21BP can do so by joining the ANZA net on 21.204 MHz at 05.00 UTC daily, as he is a regular patron when conditions permit.

VATICAN CITY

Ever wondered where the three stations with the HV prefix are located? I have and now I know. According to RAD. COMM. June 1982, HV1CN, since coming on the air in 1957, is located on top of the building which houses the original studios of Vatican Radio. HV3SJ is located in the grounds of St. Peter's Bascilica, and HV2VO at the Vatican Observatory, which is located in the grounds of the Pope's summer residence at Castel Gandolfa. All three calls have been active this year.

FB8WG

George FB8WG, who has given many a "new one", including a considerable number of VKs, stay on the Island is coming to an end. George's XYL must be congratulated for the way she has handled the QSLing, including the prompt return of cards and excess IRCs that were forwarded with the initial request.



George FB8WG

SU QSLing

All SU stations should be QSLed to the Call Book QTH. Many SU calls have and are still unfortunately being pirated and QTHs are correct in the 1982 Foreign Listings.

WRONG POST BAG?

John ZL2BHS was awaiting some important mail from WA1KVC which he knew was posted AIR MAIL on the 2nd April, 1982. John received it, after his fingernails were bitten off up to the elbows, on the 3rd June, 1982, complete with contents and stamps but with the addition of the stamp-mark "15000TP. HO CHI MINH 3 — Vietnam — 21/5/1982". So don't give up on that much promised card, it could be coming via the "long" path and you could end up with a collector's piece. It was posted on the 2nd of April not the 1st, John.

AFRICA

Ed W4MGN is tripping through Africa again. The last of his two month planned itinerary is August 3rd — W4MGN/3B8, August 8th — S79ARB, and the 12th — 5Z4CZ. QSLs to W4VDE. Last year Ed went on a similar trip and he actuated 9U5 land. Cards arrived promptly and correctly filled in, but the ARRL did and still will not recognise it for DXCC credits.

CISKEI

Maybe a new country? This area of Africa became independent late last year and operations have been planned under the prefix S42. Whether Don Search W3AZD, the ARRL DXCC administrator, will consider it only time will tell. Advice is, work the first one you hear, QSL and hope that it will not be too long before acceptance is granted.

MAWSON BASE

Anyone requiring Mawson Base should monitor "Open House" 14.332 MHz each Thursday at 0930 UTC as Charles VK0LO joins the net and generally stays till 1200 UTC.

All QSLs for Charles go to VK6YL, either QTHR or via the Bureau.

VP8

The Falklands are back on the air. Quite a number have been operating off batteries and passing essential traffic. Power is now being restored and, although it will take a long time to get back to normal, they are heading in the right direction.

THE CONGO

Jorg TN8AJ has been giving many VKs a new one on 15 metres. Jorg is still running one kilowatt to his antenna system and for that QSL card send to Y25LO either direct or via the Bureau.

UPDATE ON CLYDE VALLEY DX GROUP

(See May AR p21)

As told in May the Clyde Valley Group are to operate from each of four extreme points (S, W, E, N) of Scotland. Each of the four locations will issue a distinctive QSL card exclusive to the location, and confirmed contact with each location entitles the station to claim a "MAIN EXPEDITION AWARD CERTIFICATE".

DATES: MULL OF GALLOWAY (S) — Operation from Sunday, 8th August, 12.00 UTC through to close down on Tuesday, 10th August, 12.00 UTC.

ARDNAMURCHAN POINT (W) — Thursday, 12th August, 12.00 UTC, to Saturday, 14th August, 12.00 UTC.

DUNNETT HEAD (N) — Monday, 16th August, 12.00 UTC, to Wednesday, 18th August, 12.00 UTC.

BUCHAN NESS (E) — Friday, 20th August, 12.00 UTC, to the final closure on Sunday, 22nd August, 12.00 UTC.

TIMES: Main frequencies for 20m are 14.210 and 14.190 with operating times around the clock with predicted coverage to VK on 14.190 MHz at 19.00-22.00 and 06.00-11.00.

15m will be operated 09.00-22.00 and VK will be looked for on 21.170 MHz 09.00-14.00.

40m worked 22.00 to 09.00 on 7.080 MHz as conditions allow.

All bands will be SSB operation with the special expedition call sign GB4GM and QSLs to the RSGB Bureau.

THANKS

This segment has been compiled from information in magazines, including cq-DX, BREAK-IN, WORLD RADIO, RAD. COMM., DX Bulletin, QST, QTC, and the Geoff Watts News Sheet, also amateurs G3NBC, ON7EJ, ON7WW, JY3ZH and VKs 3UV, UX, YL, DKK, 4AIF, 6IH, NE, XI and YL, also SWL Eric L30042. Thanks to all contributors and good DXing. ■

DX Heard and Worked

CW WORKED ON THE WEST COAST

3.5: GI3LFH, GM3YTS, PY1MAG, PY1ZAE, ZS6CK.

7: FB8WG, HZ1AB, N6YK/V2A, OA4AWD, VP5JEX, ZL4PO/C.

CW SWLing WITH ERIC L30042

10: FK8BU, FK8EH.

15: 6Y5SG, FK0AD, FK8AL, FR7BP, HB9AEV, HK1QQ, N0ZO/DU2, TG9NX, W1DV/DU2, YC2BDJ, YU1VV, YV5EA.

20: 4S7MX, 9M2CF, AM03CXC, CT4DX, EL0AP/MM, F6ATQ, FK0AF, FK8DP, FO0JD, FO8IR, N6YK/V2A, RK7JAA, T32AF, XE1LCH, XE2ACG, YZ4Z, ZL4GF/C.

30: C31YC, DK8SV, DL7AEA/EA6, F6ARC, G3JFF, GM3JDR, GW3AHN, HA7RY, HB9HQ, JA1MUZ, KM2DXU (EXP), OE9SLH, OH0BHA, OK2PFY, OZ9XD, VE1ASJ, YU3TZT.

40: 4K1A 9J2BO, DL7AN, EA5CEN, FK8BU, G4CAO, HA6YH, LZ0GDL, OK3CSC, SM5CLE, T30AT UA2FCB, UF6FFX, UK5FAA, UP2BHC, UQ2GFM, WP4CEQ, Y51ZE, YU3TEY.

80: UB5BAT, UQ2GDW, YB5AES, YU2RTW, ZK1DX

QSLers for June at Eric's QTH included: FK8CW, FK8EB, GB2RN, GD4BEG and OZ3LF (10 MHz), VK9YC, VS9HK (10m Beacon), XE2ACG, YV2BE, ZK1CQ, ZM7VU (18 MHz), 5Z4CM.

With no beams, rhombics, long wires or Vees Eric has now logged 39 countries from 459 CW stations heard on the 10 MHz band, also Eric could probably be the first VK to receive a card for the 18 MHz band. Your persistence has paid off, Eric, congratulations. (VK3AH.)

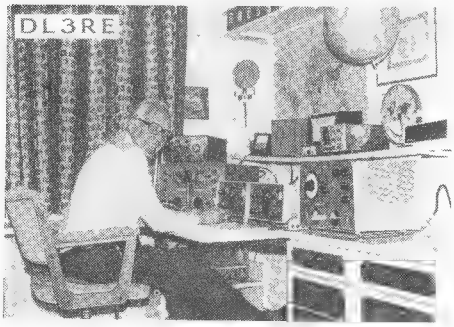
QSL MANAGERS

4A2Q (XE2AQ), C31YC (DL0OI), CN8CY (G3GJQ), EL0AP/MM (JH4NPP), ET3PG (DJ9ZB), FK8CW (K2IJL), HI8XT (JA1XIQ), J28DP (F2GA), N6YK/V2A (N6NK), PA3BYI (DA6GW), TG9NX (WA4RZL), TZ0PP (F9KP), V3MS (W0CP), YB5AES (W4BBP), YU0ITU (YU1EXY), YZ9HDE (YU2HDE), ZL4GF/C (ZL4KI), ZS5SP (WD4HIV). MANAGER shown in brackets.

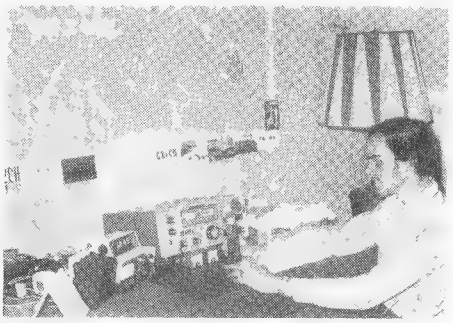
QTHs YOU MAY NEED

CT2YG, Box 5, Lagoa 9560, St. Miguel, Azores
FK8BBU, Box 2448, Noumea, NC.
FK8EH, Box 6110, Noumea, NC.
FO8IK, Box 4383, Papeete, Tahiti.
FO8GM, Box 3835, Papeete, Tahiti.
FO8IR, Box 6029, Papeete, FAAA, Tahiti.
J28DM, Box 2414, Djbouti.
S81WJJ, Box 821, Yumtato, Republic of Transkei.
YC2BDJ, 95 Pandanaran St., Semerang, Indonesia.
ZK1DX, Box 269, Raratonga, Cook Islands.
ZS2DK, Box 10050, Port Elizabeth, Rep. of SA.

Faces Behind the Key and Microphone



Kurt DL3RE



Wolf OE2VEL

Charles F6CVR

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IC2A 2MX H/HELD 2W	$309
IC290 2MX FM/SSB/CW	$599
IC251A 2M MULTIMODE	$849

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LISTENING AROUND

Joe Baker VK2BJX
Box 2121, Mildura, Vic. 3500

UNUSUAL SIGNAL

A New Zealand amateur has told me of reception in New Zealand and elsewhere about what he described as "particle transmissions originating from various sources in the northern hemisphere" on a number of bands, including the 80 and 20 metre bands. He said that overtones of the transmissions with a bandwidth of between 20 and 30 kHz have been heard, the noise being described as similar to "white noise", but not to be confused with "whistlers".

On the 80 metre band in NZ it's most prevalent between 3.7 and 3.85 MHz. Asked about the possible origin of these particle transmissions, which are believed to be originating from laser equipment, he said that they are definitely man-made and are believed to be caused by SOME TYPE OF NEW WEAPON. It was not any form of interstellar radiation.

For obvious reasons I'm not mentioning the call sign of the amateur who told me of these transmissions, which were coming in 10 minute bursts, but those who were listening with me in the group that morning will know who it was.

AN AMATEUR NAMED JOE!

When I'm "Listening Around" and I hear someone say his name is Joe, I can't resist the temptation to try and make contact with him. It was just after 5 p.m. on Saturday, 24th April, on approximately 28.500 MHz, that I heard ZS6ANW from POTCHEFSTROOM, near Johannesburg, working a station at Campbelltown, near Sydney. I was using the converted KRACO CB and 3 element antenna at 27 feet (also ex CB Crossbow Three), which happened to be aimed at JA. However, I gave the South African a shout, not really expecting that he might hear me, as I was very much QRP with only about 14 watts PEP, and that being aimed directly north. But back he came, giving me a 5 by 2, and remarking on my excellent modulation. He was using a 5 element beam and a 150S. I gave him 5 by 8. He said that he was most interested to know the type of set that I was using, and when told he said he hadn't heard of that brand of set in South Africa. All of which goes to show that, in a world of kilowatt giants, the humble CB rig can hold its own when the conditions are just right. Before he made contact with me, I could just barely hear the Campbelltown station on backscatter, and when he finished with me and was called by a VK1 (a prefix he very much wanted) I could also hear the VK1 on backscatter. Potchefstroom is a gold mining area.

INTERNATIONAL GOODWILL

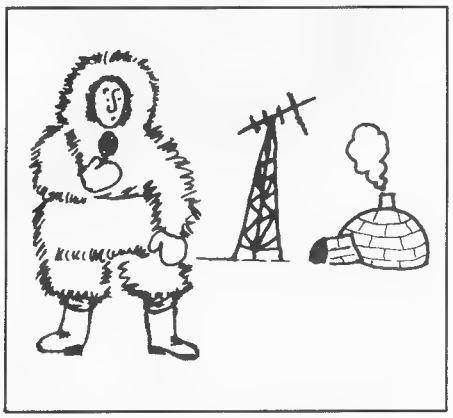
It is perhaps not inappropriate that I happen to be writing these lines in the early hours of Anzac Day when commentators at the Dawn Services have been expressing the desire for peace and goodwill between the nations. It has occurred to me that we, who are radio amateurs, have in a very special way, an excellent opportunity for promoting these international ideals. Those of us who pursue this radio hobby, by virtue of the fact that we can speak on a person to person basis with members of other nations, may have found that the stereotype images that we may have formed of other people melt into insignificance when we find that by this personal contact that we have, the other chap is but another fellow just like us.

Above the BBC building in London there is a motto "NATION SHALL SPEAK PEACE UNTO NATION" AND YET THIS HAS NOT ALWAYS BEEN SO, even by radio, as those of us who can remember the propaganda broadcasts of the war years will know. Yet we, who now can speak to other people across vast distances will have come to know and respect the other fellow in a way which was not always open to us, and is still not possible for those who are not radio amateurs. It's more than 60 years since the first Anzac Day — may we who are today's radio amateurs do our utmost to promote that international goodwill which is the favourite topic of Anzac Day commentators.

I FINALLY TALK TO STROMBERG

Those who listen to the 80 Metre Cocktail Net will know of VK3BSB's (Des of Paynesville) frequent references about having spoken to "Stromberg" in Florida. Well, for a long while "Stromberg" was just another name to me — that is until just before 8 a.m. on Anzac Day, when on 28.500 MHz the name of Stromberg materialised into a voice from my loudspeaker. Stromberg (W4WLX) in Orlando, Florida, was using 1 kW into a triband beam. He said that my signals (from my converted Kraco) weren't strong over there but as he was using a pre-amplifier, it helped him pull my little signal in. He said that he often speaks to Les VK3AAO, as well as Des, on 21.272 (a band which I do not at present have with my limited equipment).

Later, just after 2 p.m. on Anzac Day on approximately 28.590 MHz, I listened to a network of stations working Bill KM7FLP, maritime mobile, aboard the 40 foot ketch "Alita", which was somewhere in the area of Cocos/Keeling Island, apparently bound for Durban. Others heard on that net included KM6OWA (Bill), VK6CF (Chuck), and a few others that I couldn't hear too well. When the net finished, I called Bill KM6OWA, who was located at an elevation of 1,250 metres on the western side of the Sierra Nevada mountains at a place called VOLCANO, before signals both ways faded out.



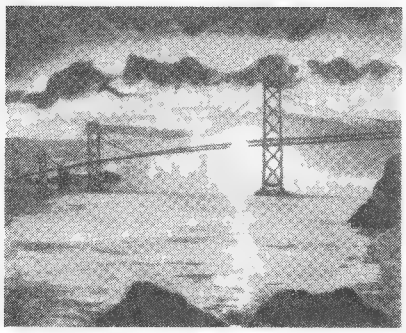
I don't seem to suffer from much TVI!!

OH NO!! TVI

As Anzac Day was not very pleasant outside (very dull, overcast and quite cold), I decided to take advantage of the good propagation then taking place on 10 metres and eventually worked Kazu (JR4GGT at Iwakuni) and JE6LDS (Hiro at Fukuoka), after which there was a sharp knock at my door. The KNOCKER (WHAT AN APPROPRIATE NAME FOR HIM) turned out to be a rather irate next door neighbour, the owner of a crummy ageing TV set with a rickety old antenna that would not be worth anything at a junk yard.

I've had dealings with this fellow before when, in the name of something called the good neighbour policy and for nix, I've tried to keep his old wreck of a set going for him, even though the set is fit only for the municipal garbage tip — a fact which I had on previous occasions made very clear to him. Nevertheless, he aired his views in no uncertain manner about my voice spoiling his TV viewing, despite the fact that I assured him that MY equipment is working as it should. I invited him to lodge a complaint with the RI, if he thought he had just cause, but I do not think that he will do this, because while I cannot preempt what any RI might think, I should imagine that he might be well advised to get rid of the old TV and its antenna and have a new one properly installed.

He asked me "Couldn't I do something (to his set) to prevent the unwanted TVI", and I told him that, as I knew the set (having previously worked on it), I was unwilling to do anything more. I tried to explain to him how it is that some old TVs do not have the requisite circuitry to reject unwanted signals, but I doubt if very much I said got through to him. I told him that, as a licensed amateur, I had a right to enjoy my hobby as much as he had to enjoy TV viewing, and that he had every right to call the RI. But so far nothing further has happened.



W6ITH

Remember my piece about W6ITH in March AR? Well, my good friend Alf Ah Gee (VK3DBV of Merbein) sent me a card with the following: "Reading your article in AR, you mentioned W6ITH. I am enclosing his card. He had a hand in building the (San Francisco) bridge pictured — he was in charge of communications." He had developed a special walkie-talkie type of set for use on the bridge by workmen. W6ITH is D. Reginald Tibbetts, 2151 Camino Pablo, Morgana, California 94556, and his gear includes a KWM-380 transmitter and receiver. Thanks, Alf.

73 from Joe. ■

Proposal to Expand the US 20m Voice Sub-Band

From V. C. Clark W4KFC
President ARRL

Obvious to most thoughtful amateurs is the importance of establishing uniform band plans in which all the amateurs of the world will co-operate. This assures equity and affords the best opportunity for international contact among amateurs employing the several transmission modes.

IARU has been a pioneer in the development and adoption of such band plans, and much success has been realised in gaining adherence to them, both by amateurs and those government administrations that have included band-planning in their rule-making.

The concept observes the principle that radio amateurs from the different countries of the world — subject to their particular class of licence and locally-imposed restrictions — should be enabled to enjoy equal access to the bands allocated to the Amateur Radio Service by the International Telecommunication Union.

Although some differences exist among the three world regions in the limits of the lower frequency bands, the amateur high frequency allocations above 10 MHz are essentially uniform throughout the world.

An IARU band plan was adopted several years ago by the IARU Region 2 organization and is in effect for every amateur band in general use. Under this plan the recommended use of the three higher frequency long distance bands is as follows:—

CW ONLY
14.000-14.100 MHz.
21.000-21.200 MHz.
28.000-28.200 MHz.

VOICE AND CW
14.100-14.350 MHz.
21.200-21.450 MHz.
28.200-29.700 MHz.

The IARU Region 2 plan contains no proviso restricting the amateurs of designated countries to smaller sub-band segments, although certain administrations have imposed regulations which do so. The amateurs of the United States, for example, have generally been required by their government to operate their voice stations in smaller band segments than those specified by the Region 2 IARU band plan.

The majority of the amateurs of the hemisphere carefully adhere to the Region 2 band plan, whether or not national regulations require such adherence. Further, there has existed an unspoken agreement, similarly adhered to, to avoid extensive CW operations in sub-bands designated for voice use.

The existing national regulations permit United States amateurs to operate voice from 14.200 to 14.350 MHz. There are 385,000 properly-licensed amateurs in the United States. By contrast, most of the 100,000 or so amateurs in the remainder of the western hemisphere are permitted by their governments to operate on voice over the much larger IARU sub-band from 14.100 to 14.350 MHz.

The radio amateurs of the United States, through their IARU-member society, the American Radio Relay League, now seek to gain a measure of relief from crowded conditions that exist within the 20 metre voice sub-band allocated by their government authority. The proposal is a measured one in that it would allow use of an additional 50 kHz to a limited number of the US amateurs — those holding the two highest classes of operating licence.

Specifically, what is sought by ARRL are the following sub-bands for US amateurs:—

14.150-14.175 MHz: For extra class licensees only, representing approximately 5 per cent of all US amateurs.

14.175-14.200 MHz: For advanced and extra class licensees only, or about 30 per cent of all US amateurs.

This change will provide a measure of relief, both from domestic and overseas interference, will enable US amateurs to communicate on a transceive basis with many amateurs of other countries who, for reasons of their own, tend to favour the frequencies between 14.100-14.200 MHz, and will constitute an important evolutionary step toward the IARU principle espoused at the 1980 Region 2 Conference calling for the "freedom of . . . radio amateurs the world over to communicate openly and fully with one another in the fulfillment of their responsibility and commitment to international friendship and goodwill", as well as the conference document dealing specifically with the new 18 and 24 MHz bands, which emphasizes the desirability and importance of "region-wide uniformity in the subdivisions by transmission modes".

While it is recognized that expansion of the US sub-allocation will increase the occupancy of the 14.150-14.200 MHz segment, producing a level of activity greater than now exists there, it will continue to be substantially below that in the 14.200-14.350 MHz voice segment to which US amateurs are now confined.

To protest the ARRL petition on the basis of an expected increase in mutual interference in a portion of the band now relatively sparsely occupied is to suggest that the amateurs of a particular country, because of their numbers (or other reasons) should be singled out for restrictions not imposed elsewhere in the world. The fact is that the amateurs of the remainder of the world have long experienced an incidental and unmerited benefit that is inconsistent with IARU purposes and objectives.

To share a resource, however acquired, involves some sacrifice, of course. But the International Amateur Radio Union exists to look beyond selfish and provincial desires, to embrace and seek implementation of the principles that benefit the world-wide amateur radio community, and to avoid self-serving or discriminatory exceptions that work to the disadvantage of the radio amateurs of ANY country. ■

QSP

ATV GROUP

It is with some considerable pride that I can report that the SA ATV Group has just won permission from the Australian Government Department of Communication to "interlink" our two ATV Repeters VK5RTV and VK5RCN. This is a first for VK and probably among the first such installations in the world.

A fascinating aspect of our repeaters is that each is at the opposite end of the technology spectrum, VK5RTV having two microcomputer controllers capable of almost every conceivable function and VK5RCN running entirely on wind and solar energy with minimal remote control capability. Therefore, in designing the interlinking control system we concentrated all the intelligence at VK5RTV with the chief responsibility of avoiding either "feedback" or "lockout" situations.

When fully operational, users at either end will be able to establish the interlink between the repeaters by use of a "Touch-Tone" signal on their inter-carrier sound; thereafter directional control will be as simple as keying your ATV Tx! Further details in future issues of the "SA ATV Newsletter".

John Ingham, Hon. Sec., South Australian Amateur Television Group.

FACSIMILE AND TV

In the USA from 22nd February amateurs are permitted to use fax (A4 and F4) and TV (A5 and FV) on segments of the existing HF bands 6m, 2m and all frequencies above 220 MHz. Below 50 MHz the emissions shall not exceed that of an A3 single sideband emission. Some variation is permitted between 50 and 225 MHz, as well as the situation below 225 MHz of a simultaneously-transmitted A3 emission on the same carrier frequency.—QST March 1982. ■

AUSTRALIAN LADIES AMATEUR ASSOCIATION

ALARA

Margaret Loft VK3DML
28 Lawrence Street, Castlemaine 3450

Siegi P29NSF

Hello to all again and hope you all are well, looking forward to spring, which is just around the corner now.

REMINDER

Girls, remember the BIRTHDAY NET on Monday, 23rd August, on 3.570 MHz ± QRM at 1030 UTC. This will be our 7th birthday, so please call in and say hello.

The first on-air Annual General Meeting was scheduled for Monday, 26th July; details next month.

CONGRATS!!

Congratulations to Carole VK2NCL, who is now VK2ECL; Joy VK2VJV, now VK2KJV, Gwen VK3KYL, now VK3DYL, Daurel VK3ANL, who is now N7DRH; Daurel was Secretary of ALARA for two years before returning to USA early in 1981.

CONTEST

The certificates for ALARA's first contest have been posted at last. With our committee in three States it took longer than we anticipated to finalise the design, printing and distribution. So apologies to all for the delay.

Valda VK3DVT, our Treasurer, was the designer of the certificate and is a very talented YL. I am sure those who see the certificate will be trying to add one to their shack wall this year.

Remember, contest number 2 on Saturday, 13th November, 1982, from 0001 to 2359 UTC, all bands and modes may be used. Details of contest rules and a sample of the certificate have been sent to AR contest column and other amateur magazines.

A suggestion for a birthday or Christmas gift for your YL this year is a subscription to ALARA; please write to Valda VK3DVT for an application form. The address is C/- PO, Brighton 3186.

CQ-YL

Girls, remember the 6th day of each month is YL activity day; call CQ YL hourly on the following frequencies — Phone: 3.588, 14.288, 21.188, 21.388, 28.588, 28.688. CW: 3.530, 14.058, 21.058, 21.133, 28.058, 28.133 MHz.

The "220" net on Mondays at 0430 UTC on 14.220 MHz is looking for new YL check-ins, so if you can manage an hour about this time give a call and you may add some new YL countries to your list for DXCC-YL.

Mavis VK3KS has been busy as usual issuing ALARA awards. These are most attractive and very popular.

Roe VK3AYL and Norma VK2DJO, with OM Frank and Bobbie (Frank's mum), attended the Mt. Gambier convention. Brenda VK3QT was also there.

Photo for this month is of Siegi P29NSF, who is a DX member of ALARA. She can usually be found on the activity day nets.

I spoke to Sharon VK4AWE, operating portable at the Mt. Isa show, on Friday, 25th June. She was being kept busy answering questions on amateur radio. Good work, Sharon.

That's all for this month. Take care.

73/33/88. Margaret VK3DML. ■

W0810

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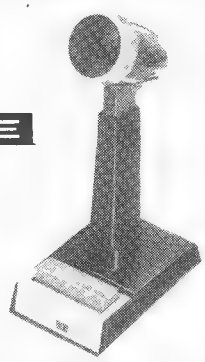

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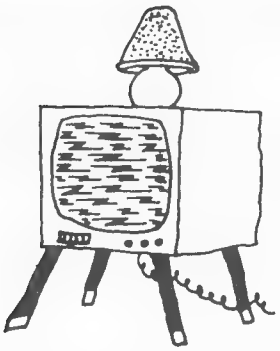


NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
38 Wattle Drive, Watsonia 3087

Power to Control Interference

A radio station can purchase the very best communications or broadcast transmitters. They can have the equipment installed, aligned, and tested to the finest standards — And the station can still receive complaints of interference! — Why? — Because the interference is not due to the transmitter, but is due to the complainant's equipment being poorly designed in respect of selectivity, and the ability of the equipment to reject unwanted signals.

We can provide and enforce transmitter regulations and standards to the Nth degree; and still not solve the interference problems which are due to poor immunity, caused by poor design selectivity.

To control transmitters, and not control other electronic equipment, and expect to solve the interference problems, would be like having a badly fitting door and asking the wind to stop, rather than fixing the door.

Because at present there is no legally enforceable regulations and standards (legislation) covering a great range of electronic equipment, especially domestic equipment, most of this equipment has poor immunity ratings. In addition, much of this equipment actually radiates incidental radiation. Incidental radiation is the emission of electromagnetic energy from such devices which are not designed, intended, or LICENSED to generate or radiate such energy by radiation or conduction.

The Government must be persuaded, in the interests of all Australians, to give every consideration to the provision of legislation for regulations and standards to cover all electronic equipment, for both immunity and incidental radiation.

DURAL NSW

Information about interference problems experienced with Dural repeater from engineer Jeff Pages VK2BYY.

"It came to our notice in December last year, appearing as a screaming noise on the two metre repeater VK2RWI.

The interference was only present when the repeater's transmitter was keyed up and, suspecting a fault in the repeater, Peter VK2PJ and myself spent New Year's Day going over the repeater and other station equipment with a fine tooth comb. We established that the interference was not stable in frequency, was random apart from requiring the transmitter to be on, and was not associated with any other equipment at the station (including the beacons on 10, 6 and 2 metres). Furthermore, close examination of the repeater's transmitter showed no signs of parasitics. We left the station none the wiser but that evening the penny dropped.

The repeater output frequency is 147 MHz, and the input is on 146.4 MHz. A strong enough signal on 147.6 MHz could mix with the repeater output, producing a spurious on the input, and, on tuning to 147.6 MHz there was one almighty carrier. The carrier was unmodulated (the scream heard on the repeater being due to audio feedback as any modulation on the transmitter also appeared on the mixing product), and also dropped off periodically for intervals of about 3 seconds. It was also not particularly stable, tending to wander over a range of about 100 kHz. The 3 second gaps rang a bell, and tuning to 148.0125 MHz soon confirmed that the spurious disappeared whenever the Telecom paging transmitter came on. Knowing that one of the paging transmitters just happen to live about 500 metres from VK2WI, it was a simple matter to confirm, using a sniffer, that this was where the spurious was coming from.

This was no run-of-the-mill spurious. Going by various S-meter readings around the Sydney area, we estimated that it was running at least a couple of hundred watts ERP. Through a friendly Telecom engineer I got on to someone associated with the paging system, but the response was along the lines that the paging transmitter couldn't possibly be at fault. A major stumbling block was that the interference only occurred during periods of low paging transmitter activity, i.e. outside business hours.

The problem was discussed by Divisional Council and a letter was sent to Telecom explaining the situation. Several weeks later a reply was received informing us that they were unable to investigate the complaint, and that they were forwarding our complaint on to DOC. Subsequently a card was received from DOC advising that the problem would be investigated when an inspector was free.

Some time later I received a phone call from DOC who, while sympathising with us, were unable to investigate as the problem only occurred outside business hours. Meanwhile the spurious had wandered down band and was now hovering around 147.4 MHz, wiping out the automatic slow Morse transmitter (VK2RCW) on that frequency and also upsetting users of repeater channel 7350.

Then a breakthrough occurred and the interference started appearing almost continuously. On the 17th March I rang DOC advising them of this, and following investigations Telecom admitted defeat and on the 23rd March the fault in the paging transmitter at Dural was repaired. Of course both Telecom and DOC are now both anxious to hear from us should there be any further problems.

So all in all, it took four months from the time we first observed the problem to the time it was repaired. Had it not started happening during business hours I imagine the problem would still have been with us. I understand staff cutbacks and the 'razor gang' are responsible for this situation." ■

QSP

ATV ON 24 CM

Without wishing to pre-empt the efforts of any other AR columnist, the latest copy of CQ-TV magazine received — No 117 — contains data on 24 cm ATV, together with some technical articles. Various ATV repeater segments are listed for the UK (draft 1273 to 1289 MHz inputs, 1241-1257 MHz outputs for 2 channels), W. Germany (proposed 1250-1260 MHz input, 1283-1293 MHz output), France centred on 1255 MHz, USA 1278.75 MHz repeater input 1253 MHz output. Most ATV activity appears to be on AM except in France, which uses FM. On non-optical paths practical experience shows there is a path attenuation of 10 dB greater than the comparable path loss on 70 cm. Other losses are given as relative difficulty of power amplification at 24 cm, greater feeder losses and higher noise figures in receiving equipment. It should be noted that the new frequency tables ex WARC 79 shows amateur as the secondary service from 1240 to 1300 MHz for all three Regions with a window of 1260-1270 MHz for amateur satellites in the earth to space direction. ■

EDUCATION NOTES

Brenda Edmonds VK3KT
56 Baden Powell Drive, Frankston 3199

UPGRADING NOVICE CALLS!

The introduction of the novice licence has allowed the entry into amateur ranks of many who would not otherwise have attempted to join. It is encouraging to see how many of these novices are now going on and achieving full calls. Indeed it now seems that the main demand may be for upgrading courses rather than novice. I know some areas are running this type of course and I would be very pleased to hear something about them, either from students or instructors. How are classes being organised? What areas are being emphasised? What special needs are showing up during the courses? Is there any way I can help?

NOVICE REVIEW!!!

I also think that it is time for the existing novice syllabus to come under review. It has now been in use for nearly five years, and any weak or controversial areas should have shown up by now.

I wonder if any readers would be prepared to give some time to a careful study of some sections of the syllabus in order to define the content and degree of depth a little more clearly?

EDUCATION NET

If there are any volunteers, I can be reached QTHR or on the Education Net which I have been trying to establish. The net is held Wednesday evenings at 12.00 UTC on or about 3.685 MHz in an attempt to bring together amateurs who are involved with classes or examinations. I feel that there is much to be gained from an exchange of ideas, and that a lot of effort could be avoided by sharing the preparation of class material that we are all doing individually. If you would like to join in — all comments and contributions are welcome.

THANK YOU

Talking of contributions of another sort — thanks to all those who are more than defraying costs when writing to me for Morse tapes or other material. As a result of your generosity, the Education Section is running in the black, and I am occasionally able to purchase a tape or two for non-exam material for those who have little other source of CW material. (I would of course be very happy to relieve successful candidates of any unwanted CW tapes that could be recycled or copied.)

COMMERCIAL BREAK

I now have available for copying ten CW exams at each speed — 5 and 10 w.p.m. These are past exams in the format at present being used, so are recommended for use just before the exam, i.e. they are not a learning tape. However, I do have some learning tapes also — starter, and some random letters and plain language at both speeds. The system is — you send me a tape and I copy onto it for you. The 10 exams fill a C60 tape. So specify what it is you want. Allow a couple of weeks for return, as I have to fit my free time into the availability of the copies. The only cost involved is the postage.

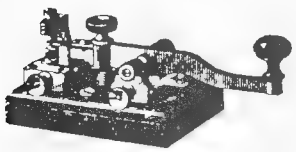
I also have trial novice and AOCP theory and regulations exams available — two of each. These can be had from me or from the Executive Office. I aim to have a new theory exam ready the month before each official exam. There is no copyright on these, so they can be used as you wish. Again the only cost is postage.

Best wishes to those of you sitting for the August exam. May we hear you all on air very soon.

73. Brenda. ■

POUNDING BRASS

Marshall Emm (VK2DXP)
PO Box 362, Goulburn, NSW 2580



Pounding Brass, a new monthly column, will appeal to all, from the Novice who has just received a licence to the seasoned SSBer who hasn't used the key since sitting for the licence.

Welcome to AR, Marshall. (Ed.)

TECHNIQUES AND TITBITS FOR THE CW OPERATOR

This is intended to be a regular feature for anyone interested in CW operation, and I would like to begin by making some general comments and describing the aims and intentions of the column.

For those who may have some misgivings, I would like to state categorically that I am not a "CW FREAK". I very much enjoy using CW, and I feel that the mode has been overshadowed in the Radio Press by the less demanding radiotelephone mode. There is no dust on my microphone, and I would like to think I have a reasonably well balanced attitude toward the various aspects of this hobby of ours. By means of this column I hope to restore the balance of printed matter a bit, to remove a bit of the mystery, to pass on information of an operational nature, and to provide a forum for discussion of any matters which seem worthy of comment, so long as they have some relationship to the CW mode.

I am not an axe-grinder. I know full well, for example, that in some eyes I am committing a sin by using the term CW when in fact the mode is Interrupted Continuous Wave, or ICW. But I will use the term CW in the sure and certain knowledge that everyone knows exactly what I mean.

Any implication in this column that a particular procedural usage is "correct" is only my own understanding of common practice and practicality. But communication by definition relies on mutual understanding of form and content, and these things can only be satisfactorily discussed in print. Could you really ask another operator "U SEND T FER 0, HW CUM"? If you did you might well be told that everybody knows T means 0, but of course that is only a part of the story. One might send "TEMP 0 C" or even cut it down to "T 0 C", but you would not be communicating very well if you sent "T T C". That is a very good example of what this column is all about.

Some of the topics to be discussed in future months include Learning and Teaching Morse Code; Conducting a CW QSO; The Q Code and Abbreviations; Contest Operation; Keys and Keyers; QRPp Operation; The Slow Morse Broadcasts; CW Net Operation; and CW DX and Dogpiles.

I would like to devote a part of each column to readers' questions, so if there is anything at all that puzzles you, please drop me a line. There is every chance I won't know the answer, but some other reader might.

Next month's column will be devoted to the CW QSO, and should be of particular interest to those of you who are too bashful to try it "live".

Till then, 73 ES BCNU.

VK CW QRPp calling frequency: 80m 3.530 MHz.

NOVICE NOTES

Edited by Ron Cook VK3AFW
7 Dallas Avenue, Oakleigh 3166

Araldite Insulators

David Rosan ZL1AFQ, who resides in beautiful Mariangi Bay has written to me describing his experience with araldite insulators. Over to you David.

"I read with much interest the Novice Notes AR of April 1982 concerning the use of Araldite as an insulator/clamp for a dipole.

It may be of interest to your column readers that I have used Araldite for about 15 years as the insulator/support for a 20 metre groundplane and latterly 15 metres.

Initially I used a very large ceramic insulator (Fig. 1) (size 8 in. long of unknown origin) but used Araldite as the support medium for the vertical element. This proved to be extremely successful. During the lowering of the antenna for some maintenance (the GP sat on top of a 22 foot section of ¾ in. water pipe, the centre insulator snapped but was repaired with Araldite which held for the rest of the system's life. The central element was a war surplus copper clad steel tube which eventually corroded and broke (I lived near the ocean) and the antenna was discarded.

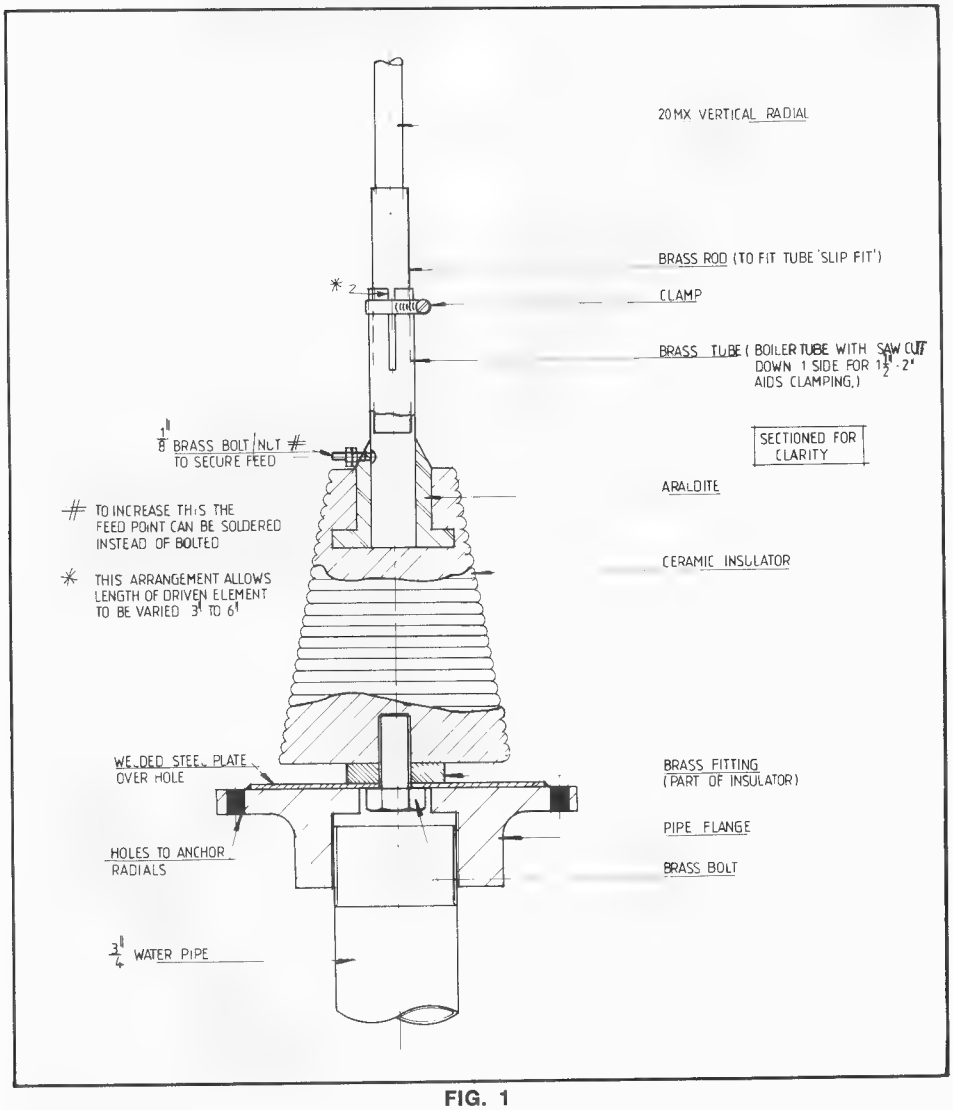

20MX VERTICAL RADIAL
BRASS ROD (TO FIT TUBE 'SLIP FIT')
CLAMP
BRASS TUBE (BOILER TUBE WITH SAW CUT DOWN 1 SIDE FOR 1½-2" AIDS CLAMPING.)
SECTIONED FOR CLARITY
⅛" BRASS BOLT/NUT # TO SECURE FEED
ARALDITE
TO INCREASE THIS THE FEED POINT CAN BE SOLDERED INSTEAD OF BOLTED
CERAMIC INSULATOR
* THIS ARRANGEMENT ALLOWS LENGTH OF DRIVEN ELEMENT TO BE VARIED 3" TO 6"
WELDED STEEL PLATE OVER HOLE
BRASS FITTING (PART OF INSULATOR)
PIPE FLANGE
HOLES TO ANCHOR RADIALS
BRASS BOLT
¾" WATER PIPE

FIG. 1

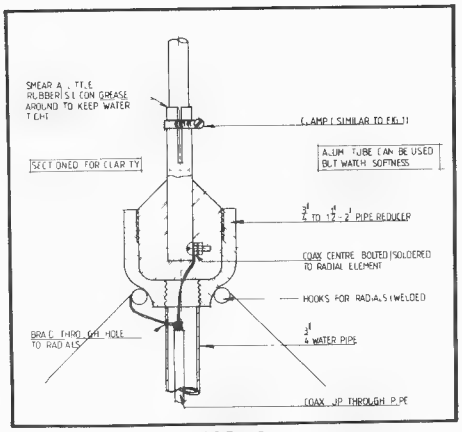

SMEAR A THIN LAYER OF RUBBER SILICON GREASE AROUND TO KEEP WATER TIGHT
CLAMP (SIMILAR TO FIG 1)
SECTIONED FOR CLARITY
ALUM TUBE CAN BE USED BUT WATCH SOFTNESS
¾ TO 1½-2" PIPE REDUCER
COAX CENTRE BOLTED/SOLDERED TO RADIAL ELEMENT
HOOKS FOR RADIALS WELDED
BRASS THROUGH HOLE TO RADIALS
¾" WATER PIPE
COAX UP THROUGH PIPE

FIG. 2

Due to space considerations the ground plane was again erected but using a 'modified version" at the centre (see Fig. 2) and this provided many years of good service being somewhat more robust in overcoming the weakness of the ceramic insulator's brittleness and tendency to snap. This later system provided many years of service and I would no doubt still be using it but for a change of QTH some months ago.

From memory, the insulator in the later system measured many, many megohms (how many I can't recall), however I believe this is not too important as the centre of the Dipole/GP is high current low voltage. Araldite has both good insulation properties and inherent strength.

I hope this short note is of some interest."

Yes David a very interesting note. Thank you for your contribution.

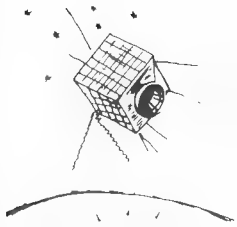
73. VK3AFW. ■

QSP

TRANSISTOR DANGER

Transistors in some transmitter power amplifiers are encapsulated in a ceramic called beryllium oxide. No danger can arise from normal handling of this material in its solid form, but it is extremely toxic if pulverized and the dust is inhaled. The amount which can cause death or chronic disease is incredibly small . . . only 50 micrograms per cubic metre.

Never under any circumstances attempt to drill, file, grind, polish, cut, break, etch or otherwise modify a piece of this ceramic. Also do not discard these transistors in waste which — through compacting or other processes — might cause fracture or abrasion.—WORLD RADIO, February 1982. ■



AMSAT AUSTRALIA

Bob Arnold VK3ZBB
41 Grammar Street, Strathmore 3041

CO-ORDINATOR
CHAS ROBINSON VK3ACR.

AR NOTES
BOB ARNOLD VK3ZBB.

CORRESPONDENTS
VK3YQX, VK5HI, VK5AGR.

ACKNOWLEDGEMENTS
AMSAT Satellite Report.
ARRL News Bulletins.

INFORMATION NETS

AMSAT AUSTRALIA
1000Z Sunday and Wednesday (3.680 MHz winter, 7.064 MHz summer).
Control: VK3ACR.

AMSAT PACIFIC
1100Z Sunday, 14.305 MHz.
Control: JA1ANG.

AMSAT SW PACIFIC
2200Z Saturday, 28.880 MHz.
Control: W6CG.

PICK UP YOUR BASIC ORBITAL DATA FROM THE AMSAT AUSTRALIA NET.

AWARDS FOR SATELLITE OPERATING
There are two awards available to local satellite operators:—

1. OSCAR SATELLITE COMMUNICATIONS ACHIEVEMENT RECOGNITION (AMSAT).

This award is made to amateurs who can confirm by QSL Card, two-way communication with two countries, together with six different VK Call Areas.

Cards should be sent to Colin Hurst VK5HI, 8 Arndell Road, Salisbury Park, SA 5109, with adequate money to cover postal charges for the return of the cards and a certificate

2. MODE J AWARD.

To become a member of the Mode J Club send in your log of eight two-way contacts on Mode J, AMSAT OSCAR 8 (QSL cards are not required). With this log give details of your equipment and send to Larry Roberts W9MXC, 3300 Fernwood, Alton, Il., 62002, USA. To receive an attractive certificate and the monthly (approximately) newsletter include adequate US dollars to meet the postal charges, etc. I suggest US$10 would cover 12 months costs.

AMSAT OSCAR 7
It is reported that the AO7 Beacon on 145.972 MHz has again been heard. Operators are requested to monitor this frequency when AO7 is in sight and to report any signals to our Co-ordinator VK3ACR.

MELBOURNE'S NEW SATELLITE SERVICE
Dick Robbins VK3ARR and Peter Hallgarten VK3AVE have now established an "on request" service to provide information on orbit passes visible from Melbourne for all amateur satellites and a few professional ones of note, such as SHUTTLE and SALYUT 7.

A feature of this service is quite unique in that it uses another one of the more sophisticated amateur modes — AMATEUR TELEVISION.

On request Dick will display the orbital data through the Melbourne ATV Repeater VK3RTV.

Dick and Peter can usually be found each evening on 147.200 MHz.

INFORMATION SERVICE RS5 AND 7
RS5 and 7 appear to be giving regular news bulletins via their code store channels. The news report naturally refers to the activity of the Soviet Amateur Satellites, it is repeated for three consecutive days and then updated. The frequencies are 29.452 and 29.501 MHz.

PHASE IIIB
The new Phase IIIB satellite has been checked out and found to be in first class condition, apart from slight overheating in the receiver. All is now in readiness for the launch, which is scheduled for February or March 1983.

AMSAT CAR STICKERS
Andy VK3YQX has a supply of car stickers produced in the USA as a fund-raising activity for the Phase 3 satellite. Please support the amateur satellite cause by sending $1.40 for one of these stickers to Andy Squires, 55 Vincent Street, Daylesford, Victoria 3460.

STATUS REPORT
AMSAT-OSCAR 8
The battery condition is giving some cause for concern as the voltage is only just over the shut-down parameter. The satellite has been taken out of service on a number of occasions during June.

For the time being AO8 will be on Mode J only and will be in Mode D (shut-down) on Wednesdays. The position will be reviewed when the satellite is out of the earth's shadow.

UOSAT 9
Attempts to salvage UO9 continue with attempts to de-sense either the 2 metre or 70 cm command receiver. In addition to the receiver breakthrough requirement it appears that correct timing is required to provide coincidence of two narrow unsynchronised pulses. It is therefore necessary to make the attempt often enough to give a reasonably favourable statistical chance of realising a pulse coincidence. The current high power attempts are being conducted by Dave Olean K1WHS.

RS SERIES 3 TO 8
Working well.
RK 02 (ISKRA 2)
Has not been operational as far as we can ascertain. Likely to be out of orbit when these notes are published.

ISKRA
Astronomer Greg Roberts ZS1BI reports that ISKRA 2, the Russian word for spark and the newest amateur radio satellite, was spotted on a recent pass over his observatory in South Africa. The satellite was launched at about 328 km (204 miles) on 17th May when it was deployed through the hatch of the Salyut 7 spacecraft by the two cosmonauts aboard. Greg reports that the ISKRA 2 appeared to have a magnitude of about 7.5. That is about four times dimmer than normally can be seen with the unaided eye. Each magnitude step represents a change in brightness of 2½ times (2.512 to be more precise). A 5th magnitude star is the dimmest one can see normally, while the brightest stars have magnitudes of 2, 1 or even —1. Sirius, the brightest star, is —1.44, while Mizar, the second "star" in the Big Dipper's handle, is actually a binary (double) comprising a 2nd and a 5th magnitude pair.

The modest instrument Greg used had an objective lens of about 63 mm (2½ in.) and a field of view of about 8 degrees. ISKRA 2 appeared to be spinning "because", according to ZS1BI, "of the rapid fluctuations in brightness which usually indicates a spinning object".

ZS1BI has been doing this for years and is probably the best there is at watching these elusive points of light flit across one's field of view just after dusk or just before dawn. Meanwhile, a frustrated amateur fraternity awaited some indication regarding the possible future of the newest sputnik, ISKRA 2. The normally productive news sources have been sadly silent with respect to ISKRA; a sign that perhaps there is little hope held out for the short-lived bird to be turned on. A wait-and-see posture was apparent in most veteran OSCAR users. Many pointed to the 24th of June special events stations as offering a suitable "occasion" for transponder activation if the technical difficulties earlier surmised to have delayed the turn-on turn-out to be false or cured.

Dozens of low-flying satellites can be seen in the evenings and before dawn with the naked eye. Many are in low (150 km) polar orbits and are magitude 1 or 2, making for easy spotting. ■

SATELLITE OPERATING FREQUENCIES — JUNE 1982 (in Megahertz)

Satellite	Oscar 8	UOSAT 9	RS3	RS4	RS5	RS6	RS7	RS8
Beacon	29.402	145.825	29.321	29.360	29.452	29.411	29.341	29.461
Beacon	435.095	435.025*	29.401	29.408	29.331	29.453	29.501	29.502
Transponder Up	145.850-145.950		none	none	145.91-145.95	145.91-145.95	145.96-146.00	145.96-146.00
Transponder Down	29.40-29.50	†			29.41-29.45	29.41-29.45	29.46-29.50	29.46-29.50
Transponder Up	145.90-146.00		none	none	145.826‡	none	145.835‡	none
Transponder Down	435.20-435.10				29.331		29.341	

* Other beacons for experimental use. †Various experiments planned. ‡ Auto Transponder.

The following frequencies will be used for Phase III B —

B. TRANSPONDER

Uplink	435.025-435.175
Downlink	145.975-145.825
General Beacon	145.812
Engineering Beacon	145.990

L. TRANSPONDER

Uplink	1269.050-1269.850
Downlink	436.950- 436.150
General Beacon	436.04
Engineering Beacon	436.02

What is Lightning?

Storm clouds develop an electrical charge (a cloud is negatively charged at the bottom, positively at top), and this produces a positive charge on the ground that follows the cloud like a shadow. Between the cloud and the ground there is a potential of millions of volts. Positive and negative "want" each other (opposites attract, like magnets), but air is a poor conductor. So the electrical charges strain — the positive current runs up hills, church steeples, trees, people, trying to reach the negative bottom of the cloud. Meanwhile, jagged negative feelers are shooting down, a little closer to the ground each time. Finally, the resistance of the air is overcome and a connection is made. Along a conductive air channel, a vast surge of electricity shoots from ground to cloud with a brilliant flash. (That's right — FROM GROUND TO CLOUD, though it LOOKS like cloud to ground.) One stroke of lightning can be a few hundred metres or many kilometres long.

HOW HOT IS IT?

Typically, from 17,000 to 28,000 degrees Centigrade. That's three to five times the temperature of the sun's surface. Scientists talk of "cold" lightning, but they mean one kind of lightning that lasts a very short time, about one-thousandth of a second. The other kind ("hot") lasts a lot longer, relatively — about 1/10th of a second. Hot lightning starts fires; cold lightning's effect is more likely to be explosive. Lightning's intense heat violently expands the air along the path of the stroke. So fast does the air rush aside that it makes waves that can be heard — a sharp crack if the lightning is close to us, more of a rumble if it's far off. "Superbolt" is the name given to very rare flashes that are more than 100 times as powerful as regular lightning. The run-of-the-mill bolts put out about 1,000 million watts; a superbolt gives at least 100,000 million, maybe a billion, maybe 10 billion! These recently discovered bolts seem to hit most often off the coast of Japan. Mostly, they strike over water but once in a while one hits land.

WHEN DOES IT HIT?

Every day, approximately 1,800 electrical storms occur round the world. They give forth about 600 lightning flashes each second, of which 100 strike the earth. That's roughly 8.5 million lightning bolts touching down every 24 hours. Most scientists today agree that the steady loss of electrons to the atmosphere is balanced by thousands of daily thunderstorms that pump electrons back to earth. In other words, thunderstorms keep the world in electrical balance.

Lightning also converts some of the nitrogen in the air into nitrogen compounds, which are washed down with the rain. Each hectare of earth gets a few kilos of this free fertilizer a year.

SAFETY DO'S AND DON'TS

Don't stand under a tall tree. Don't let yourself be the tallest thing around (such as in a boat, an open field or on a hilltop). If you are in the water, get out. Put down metal objects — golf clubs, fishing rods, guns; take of cleated shoes; don't ride a bicycle. If you feel your hair stand on end or your skin tingle, it may be a sign that lightning is about to strike. Squat, bend your head forward and hug your knees. But don't kneel, lie flat or get on all fours. Get inside a large building or house. Or a car (it isn't the tyres that make it safe — it's the metal frame). Don't touch metal inside the car or use the radio. Once you're indoors, the safest place is in the centre of the largest downstairs room, away from the fireplace or chimney. Don't use the telephone, the plumbing or plug-in appliances. Stay away from doors and windows, radiators and stoves. If a person is hit by lightning, chances are the shock is only temporary — if someone acts fast. The danger is brain damage if the heart and lungs aren't revived quickly. Still, any number of lightning victims who appeared dead have been "brought back to life" by quick thinkers who were trained in the techniques of resuscitation.

Finally, here is a comforting thought. If you're scared of lightning, just remember this: if you see the flash, it has missed you.

Lyrebird December 1981 ■

The WIA is in business for more members. Please help.

Old-Timers Club

RADIO AMATEUR OLD-TIMERS' CLUB

Members are reminded of the QSO party on MONDAY, 9th AUGUST, 7 MHz, 0800Z to 1100Z.

Rules and logs — See AR February 1982.

John Tutton VK3ZC. ■

CONTESTS

Reg Dwyer VK1BR
PO 236, Jamison, ACT 2614

CONTEST CALENDAR

August

7-8	ROMANIAN CONTEST	FCM/CQ
14-15	REMEMBRANCE DAY CONTEST	AR 7/82
14-15	SEANET PHONE	CQ
14-15	EUROPEAN CW	FCM
21-22	ALASKA QSO PARTY	CQ
21-22	SARTG RTTY	AR/CQ
28-29	ALL ASIAN CW	AR
28-29	ALABAMA QSO PARTY	CQ

September

5	BULGARIAN CW
11-12	EUROPEAN PHONE
11-12	G. QRP DAY
18-19	VK NOVICE CONTEST
18-19	SCANDINAVIAN CW
25-26	SCANDINAVIAN PHONE
25-26	DELTA QSO PARTY

NOTE:
Check the rules of the Remembrance Day Contest in July AR. They have been altered.

CONTEST CHAMPION TROPHY — 1981 RESULTS

The contest champion is chosen from participants in the following contests who consistently achieve high scores: John Moyle National Field Day Contest, Remembrance Day Contest, VK Novice Contest, VK/ZL Oceania Contest.

Entrants must participate in three of the four contests and must achieve a position up to 10th. For each of these positions you are awarded a points score which combine to make the final score total.

From the 14 amateurs that were eligible to participate after the VK Novice Contest, only two (2) managed to participate in three of the four contests.

RESULTS

First position and winner: VK3XB with a points score of 19 points.

Second position: VK2BQS with a points score of 12 points.

There were no other stations qualifying.

Mr. Ivor Stafford VK3XB again wins the Contest Champion trophy with his consistent efforts with contests and operating the amateur frequencies.

Ivor has successfully won the Contest Champion trophy for 1980 and now continues to hold the trophy for another year. Congratulations Ivor.

ALL ASIAN CW RESULTS FROM 1981

Australia

VK4XA	28 MHz 17808 Single Band Certificate winner.
VK3RJ	28 MHz 925.
VK2BQQ	Multi-band 51900 Certificate winner.
VK6FS	Multi-band 45720.
VK5TI	Multi-band 25584.
VK6JS	Multi-band 19740
VK2DID	Multi-band 4653.

THE 23rd ALL ASIAN DX CONTEST

The purpose of this contest is to enhance the activity of radio amateurs in Asia and to establish as many contacts as possible during the contest periods between Asian and Non-Asian Stations.

Contest Period

1. Phone: 48 hours from 0000 UTC June 19, 1982, to 2400 UTC June 20, 1982.
2. CW: 48 hours from 0000 UTC August 28, 1982, to 2400 UTC August 29, 1982.

Bands

Amateur bands under 30 MHz.

Entry Classifications

1. Single operator, 1.9 MHz band (CW only).
2. Single operator, 3.5 MHz band.
3. Single operator, 7 MHz band.
4. Single operator, 14 MHz band.
5. Single operator, 21 MHz band.
6. Single operator, 28 MHz band.
7. Single operator, multi-band.
8. Multi-operator, multi-band.

Exchange

1. For OM stations: RS(T) report plus two figures denoting operator's age.
2. For YL stations: RS(T) report plus two figures "00 (zero zero)".

Restrictions on the Contest

1. No contact on cross-band.
2. For participants of single operator's entry: Transmitting two signals or more at the same time, including cases of different bands, is not permitted.
3. For participants of multi-operator's entry: Transmitting two signals or more at the same time within the same band, except in case of different bands, is not permitted.

Point and Multiplier

Point: Perfect contact with Asian stations (excluding US auxiliary military radio stations in the Far East, Japan: KA stations) will be counted as follows:—

1.9 MHz band — 3 points.
3.5/3.8 MHz bands — 2 points.
Other bands — 1 point.

Multiplier: The number of different Asian Prefixes worked on each band. According to the WPX rules.

Scoring

The sum of the contact points on each band x the sum of the multipliers on each band.

Instructions

Please use a log sheet form (and use a separate sheet for each band).
Please keep all times in UTC.

Please fill in the blanks of "multiplier" by countries or prefixes, only the first time on each band.

Awards

For both Phone and CW, certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country.

The highest scorer in each Continent of the single operator multi-band entry will receive a medal and certificate from the Minister of Posts and Telecommunications of Japan.

The highest scorer of the multi-operator multi-band entry in each Continent will receive a medal.

Reporting

Submit a summary sheet and logs of only one classification.

Both log and summary sheet must arrive in JARL, PO Box 377, Tokyo Central, Japan, on or before the following dates:—

Phone: September 30, 1982.
CW: November 30, 1982.

Disqualification

Violation of the contest rules. False statement in the report. Taking points from duplicate contact on the same band in excess of 2 per cent by the total.

Announcement of the Results

Phone: About February 1983.
CW: About April 1983.

Countries List of Asia

A4, A5, A6, A7, A9, AP, BV, BY, CR9, EP, HL/HM, HS, HZ/7Z, JA-JR, JD (Ogasawara Is.), JT, JY, OD, S2, TA, UA/UK/UV/UW9-0, UD6/UK6C, D, K, UF6/UK6F, O, Q, V, UG6/UK6G, UH8/UK8H, UI8/UK8-A-G, I, L, O, T-Z, UJ8/UK8J, R, UL7/UK7, UM8/UK8M, N, VS6, VS9M/8Q, VU, VU (Andaman and Nicobar Is.), VU (Laccadive Is.), XU, XV, 3W, XW, XZ, YA, YI, YK, ZC4/5B4, 1S (Spratly Is.), 4S, 4W, 4X/4Z, 7O (S. Yemen), 8Z4, 9K, 9M2 (West Malaysia), 9N, 9V (Singapore), (Abu Ail).

You may have contest results by enclosing one IRC and SAE with your log.

SARTG RTTY CONTEST

Three periods GMT: 0000-0800 and 1600-2400 Saturday, August 21, 0800-1600 Sunday, August 22.

This is the 11th annual contest sponsored by the Scandinavian Amateur Radio Teletype Group. Use all bands 3.5 through 28 MHz. The same station may be worked on each band for QSO and multiplier credit.

Classes

Single operator, multi-operator single transmitter and SWL.

Exchange

QSO No, signal report.

Points
QSOs with own country, 5 points. With other countries on same continent, 10 points. With other continents, 15 points. The US, Canada and Australia call areas count as separate countries for scoring.

Multiplier
Each DXCC country and each W/K, VE/VO and VK call area. A multiplier will not be considered unless the claimed station appears in at least five logs, or a log is received from that station.

Final Score
Sum of QSO points from all bands times the sum of the multiplier from each band.

SWLs use same scoring but based on sum of stations and messages copied.

Awards
Certificates to the top scoring stations in each class in each country and each call area of the US, Canada and Australia.

Use a separate sheet for each band, and include a summary sheet showing the scoring, comments, and other essential information, and your name and address in block letters.

Logs must be received by October 10th and go to: SARTG Contest Manager, PO Box 717, DK 8600 Silkeborg, Denmark. ■

Special Notice
Equipment Review

Equipment reviews in Amateur Radio are designed to assist the would be purchaser of new amateur equipment in making a comparison with the many different types and makes currently available on the market.

In all cases, the reviews are conducted with one major objective in mind — how does it operate?

We do not profess to carry out major technical laboratory tests, as that is beyond the Institute's resources at the present time.

Further, most of the equipment reviewed is made available by the courtesy of Australian distributors or agents and is usually only in the Institute's possession for two or three days at the most.

Therefore, our reviews are conducted from an "operators" point of view only by highly experienced amateurs, and with whatever test equipment which may be available to the reviewers at the time.

Considering these restrictions, readers should therefore appreciate that individual preferences must also be taken into account when selecting new equipment, whether or not it has been reviewed in AR.

INTERNATIONAL NEWS

HONG KONG
A member advises that a visitor's licence may now be obtainable in Hong Kong. Further details are awaited.

GENERAL
IARU Region 2 Intruder Watch has observed several new intruder signals of the "hit-and-run" variety in NW USA. These are heard for a day or two, disappear, then re-appear on the same frequency weeks or months later.

The International Amateur Radio Club, which controls the use of the 4U1ITU station complex, announces that casual visitors (accepted as technically competent) may operate 4U1ITU on payment of 10 Swiss Francs (30 Swiss Francs for contest operations). It will cost 30 Swiss Francs to join the club as an annual member.

Solomon Islands amateurs have now been authorised to use the band 7.100 to 7.300 MHz.

There are now 21 amateur radio postage stamps issued in various countries — see AR May 1980. ■

* * *

We were in QSO with a K7 the other day and he said his clock fell on the floor. We asked him if the clock stopped. His comment was: "Of course it did! You didn't think it would go right through the floor, did you?"

(ARNS Bulletin) ■

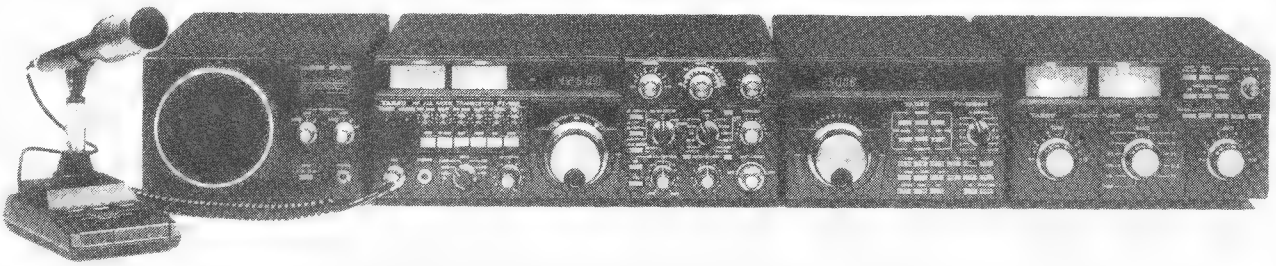
EAR & LUG
BASHERS
CERTIFICATE
This is to Certify
that Amateur Radio VK5 charlie able
has duly qualified to become a member of The Ancient Order of Ear and Lug Bashers.
Brian's uninteresting drivel has been responsible for breaking up many a pleasant gathering and dispersing crowds after having listened to VK5CA for only a short time.
PRESIDENT
SECRETARY

A novel award, presented to Brian VK5CA, by the late Frank Bentley VK5MZ some 30 years ago.

(Submitted by Brian's XYL, Marlene VK5QO)

Andrews Communications Systems

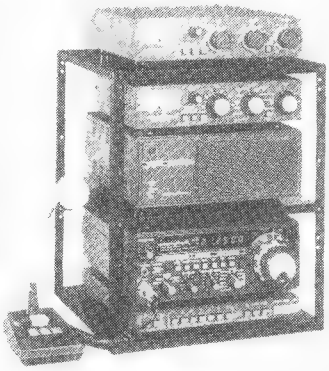
PRESENTS YAESU'S FT-102 "Super DX'er"



SP-102 . . . $999 FV-102DM FC-102 . . . $275

The **FT-102** uses 3 x 6146B's in **P.A.** for -40dB **IMD** @ 100W on 14MHz. Receiver dynamic range is typically a superb 101dB @ 0.25μV on 14MHz! 160-10m inc. **WARC**. Shift/Width, peak/notch tuning, **N.B.**, and much more . . .

YAESU



FTV-707R . . . **$135** (RRP $139)
VHF/UHF TRANSVERTER

FC-707 . . . . . **$138** (RRP $145)
ANTENNA TUNER/WATT METER

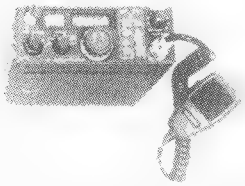
FP-707 . . . . . **$169** (RRP $170)
AC POWER SUPPLY/SPEAKER

FT-707 . . . . . **$695** (RRP $765)
HF SSB/CW/AM TRANSCEIVER

FV-707DM . . . **$249** (RRP $259)
DIGITAL 12 CH SCANNING VFO

WHY SHOULD YOU PAY MORE?

FT-290R **$345**
(RRP $385)



FM/SSB/CW 2M 2.5W Portable 10ch PLL, LCD Readout, Scanning, use Jumbo HP-50V for 50 W O/P

YAESU

FRG-7700	Full cov. RX	$489
FRG-7700	Memory unit	$120
FT-780R	70cm all mode	$599
FL-2100Z	1-2kW linear	$550
FT-230R	Compare to KDK	$349
FT-680R	6m all-mode	$489
FT-480R	2m all-mode	$499
FT-ONE	New version due soon	. .
FT-790R	70cm all-mode coming!	
FT-208R	2m h/held	$298

Plenty of YAESU in stock. *12 Months Warranty on our YAESU.*

SUPERB YAESU FT-107M/DMS SERIES

FT-107M/DMS/WARC/AC
$1150 (RRP $1228) inc YM-38

FV-107

FC-107
$199

Also FT-107, without memory, current model with WARC, in stereo $795 (without AC)

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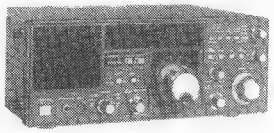

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FRG-7700SW **$459** (RRP $489)
Covers 2-29.999 MHz, AM/SSB/FM/CW

FRV-7700 $110
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FRG7700SW + memory = $569

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IC-720A	$1,175
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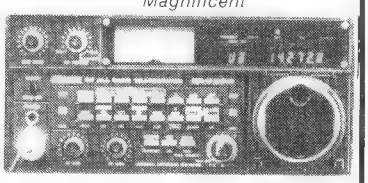
ICOM Communications Receiver Due Soon!

"Magnificent"



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12 Months Warranty on our ICOM

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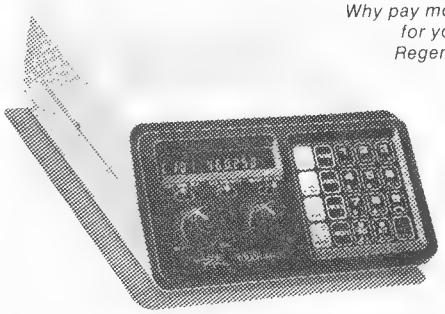

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30 ch. scanner AC/DC

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ONLY... **$399** MUST BE OVER $500

(Sole Aust. Distributor) VALUE!

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Bearcat 150FB, AC Only, no search, "no frills" scanner. **$245**

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JUMBO® LINEAR AMPLIFIERS

HP600A HF 600W O/P LINEAR

12V DC at 40 AMP av, 4/7/10W drive switch 300W AM/CW, 600W SSB output, 3-30 MHz, driver stage, pre-amp meter, protection, fan cooled, TVI filter, uses 2SC2097 driving 4 x 2SC2904's in push-pull/parallel.

$595

HP-50V, 2m, 3W to 50W ..... **$129!** HP-80V, 2m, 10W to 80W ..... **$179!**

HP240DX HF 240W O/P LINEAR

12V DC at 15 AMP av 5/10W drive switch, 120W AM/CW, 240W SSB output, 2-30 MHz, variable gain, RX pre-amp Uses a pair of 2SC2904 110W transistors

$225

HP200T HF 400W O/P LINEAR

12V DC at 30 AMP av. 5/10W drive switch 200W AM/CW, 400W SSB output 3-30 MHz, driver stage, RX pre-amp. TVI filter Uses 2SC2097 driving 4 x 2SC2097's.

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Attractive Control Box & Top/Bottom Mast Clamps Included

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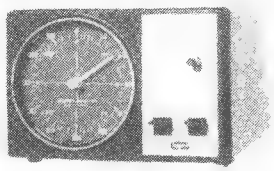
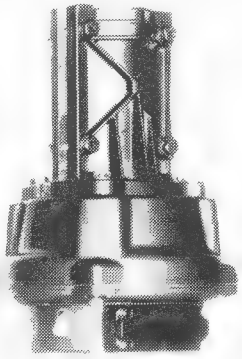


KR-400RC



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Mike Bazeley VK6HD
8 James Road, Kalamunda WA 6076

GREMLIN CORNER

Apologies are due to Tom VK4NUN. Tom earned "open" DXCC certificate No. 208. Unfortunately in June AR this was listed as having been earned by VK3NUN. Your scribe cannot lay the blame on the printer, my error entirely.

SUPERSEDED AWARD

The rules (published in AR November 1981) of "The Western Keybaud Bashers' Award" have now been superseded and the new format is as follows.

THE WESTERN KEYBAUD BASHERS' AWARD OF PERSEVERANCE

The Western Keybaud Bashers' Award of Perseverance is offered to all amateurs or SWLs who have contacted or, in the case of SWLs, printed ten Western Australian Amateurs on RTTY on any band. It is hoped to encourage the seeking of VK6 amateurs by other States and possibly by other countries. Also available will be various endorsements, such as all on one band, QRP working, etc.

RULES

1. Contacts shall be with WA amateurs only.
2. The only mode permitted is RTTY.
3. Only one contact per WA station is allowed to count towards the award.
4. All contacts must be two-way RTTY contact except for the SWL class. Crossband or crossmode contacts are not eligible.
5. All contacts shall be listed showing date, time and frequency. Log extracts and/or printouts shall be included with the award application. In lieu of this, claims can be certified by any two other amateurs.
6. No fee is payable for the issue of these awards.

APPLICATIONS

All applications and enquiries should be directed to the Secretary, Australian Amateur Radio Teleprinter Group, 91 Arlunya Avenue, Cloverdale, W.A. 6105.

DESCRIPTION

This award is printed in black with ochre borders on beige paper. The award measures 250 mm x 180 mm.

HONG KONG AWARDS

NINE DRAGON AWARD

One contact with a country in each of the following 9 zones 18, 19, 24 to 30 inclusive.

Contact for zone 24 must be a VS6.

Stations within the 9 zones require 2 contacts in each zone, with 2 VS6 contacts.

Contacts after 1st January, 1979, only valid.

Fee: US$3, A$3, £1.50 postal order, or 25 IRCs.

FIRECRACKER AWARD

Six contacts with different VS6 stations.

Stations in zones 18, 19, 24 to 28 require 10 contacts with different VS6 stations.

Contacts after 1st January, 1964, only valid

Fee: US$2, A$2, £1 postal order, or 10 IRCs

USUAL CONDITIONS

Certified log extracts only, no QSL cards required. Payment to be made in cash or cheques payable to HARTS. If sending postal orders please leave payee blank. Claims to Awards Manager, HARTS, GPO Box 541, Hong Kong.

The Firecracker Award is a beauty. The award is printed in black and gold on a brilliant red paper.

NEWS FROM VERON

The VERON, the official Dutch amateur radio body, produce a Dutch Award and Certificate Guide, printed in English. Though your scribe has not seen a copy of this guide, further information can be obtained by writing to VERON, PO Box 9, 1000 AA Amsterdam, The Netherlands.

Incidentally, any profits made from the sale of this booklet will go towards purchasing a new transceiver for the club station PA0RCA. ■

The Western
Keybaud Bashers
Award Of Perseverance

awarded by

THE AUSTRALIAN
AMATEUR RADIOTELEPRINTER GROUP

This is to confirm that

Sample Only.

has upheld the high ideals and traditions of amateur radio and has shown great perseverance in attaining

the working in two-way contact no less than ten Western Australian amateurs using radioteletype

or

the printing of no less than ten Western Australian amateurs using radioteletype

and therefore has earned the right to hold this award.

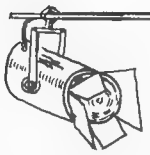
Well done.

Endorsements

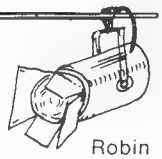
President . . . . . .

Secretary . . . . . .

Date . . . . . .



SPOTLIGHT ON SWLing



Robin L. Harwood VK7RH
5 Helen Street, Launceston, Tas 7250

CONTEST TIME

Well, it is Remembrance Day Contest time once again. Every August the Wireless Institute of Australia holds a contest in memory of those Amateurs who made the Supreme Sacrifice in the Second World War. This year, the "RD" will be held from 0800 UTC on August the 14th until 0759 UTC on the 15th of August. Stations within Australia will be endeavouring to contact as many stations as possible in Australia, New Zealand and Papua-Nuigini over that 24 hours period. Many SWLs will be assisting as operators or log-keepers in clubs or with individual amateurs, and some SWLs will be entering the Section open to listeners. They will endeavour to log stations participating in the Contest. I do not intend to be repetitious, as the various rules and regulations can be found elsewhere in the Contest section of this magazine. I wish all SWLs the best of luck, and look forward to seeing the results later on.

While we are on contests, it pays to check some of the amateur radio competition rules as sometimes there is a section for receiving only. Check the relevant rules and regulations carefully. As well, some awards are also available to short-wave listeners. However, the onus is on the enthusiasts to provide verification that they did log the station(s) by the production of log entries and/or QSL or verification cards to be certified by responsible individuals. The necessary qualifications are to be found listed in the details of the Award and how it may be earned.

DISCONTINUED MODELS

I have recently heard that two well known and popular receivers are no longer being produced. One of them, the Yaesu FRG-7, can be virtually found throughout the world. The other, the Barlow-Wadley XCR-30, was probably the forerunner for later models, and was certainly a pioneer in receiver design and portability. Ironically, it was the Japanese manufacturers who exploited the Wadley Loop principle, and developed it further into the Phase Locked Loop (PLL), so much that the Barlow-Wadley organisation was not able to compete commercially with the pricing and marketing policies adopted by the Japanese mass production factories. The XRC-30 was manufactured within South Africa. It is not clear if they are intending to produce any new and updated models to replace it, but the opinion is that they will be concentrating on developing military electronics software for the local region, leaving the domestic commercial field.

Also the Radio Shack/Tandy Corporation have discontinued stocking the DX 302 and DX 200 model receivers due to poor public response. So, presumably, the prices of these will come down as they clear their stocks to concentrate on more profitable lines such as computers and hi-fi. The ANARC Newsletter states that Tandy will continue to stock the basic receiver without any frills — the DX 100. Yet they did have a good receiver in the DX 160, despite its shortcomings. It can still be found in many shacks, but I have not seen many of the DX 302 models about.

NEW RTTY

HAL Communications Corporation of Urbana, Illinois, USA, has recently introduced a new receive-only RTTY terminal. The CWR-670 Telereader is a compact unit designed for Baudot and ASCII RTTY, as well as providing a Morse readout with inbuilt RTTY and Morse demodulators and video generation circuits. It requires a 12V DC power source, however the current consumption figures are not supplied. The manufacturer claims it is suitable for portable use and has 16 lines of 32 characters per line. All three common shifts (170, 425 and 850 Hz) are provided, plus high or low tones, as well as an output in parallel to connect with a printer for ASCII.

A terminal for transmission as well as reception of RTTY and CW is also available from the same corporation called the CWR 685A. It too, has provision for the three standard shifts, together with MORSE and ASCII with a 20 line by 32 characters/line green display CRT. I believe that the above terminals are available from one of the advertisers of this magazine, to which you could refer if you require any further information.

POSITIVE IDENTIFICATION

A few months ago I mentioned that I was unable to identify, readily, two stations I had not encountered before. Now I am able to pass on that they have now been positively identified. The first station on 9.027 MHz at 0500 UTC is a Clandestine broadcasting to Iran in Farsi, the language of that country. Called Radio Vatan, it is rumoured to be based in Cairo and is supporting the cause of the deposed Shah. It is operating deliberately close to a Teheran outlet on 9.022 MHz. It is at fair to poor strength and it is extremely difficult to elicit any I/Ds because the US Strategic Air Command also utilize this channel as part of their world-wide communications network on the quarter-hour overriding Radio Vatan's I/D announcements. Other clandestines are reportedly broadcasting to Iran from sites in the USSR or the Mid-East, yet their frequencies and operational status is variable.

The second unidentified station is in South America. It is R Dif Nacional dell Colombia in Bogota. I was very fortunate to observe this at 2330 UTC on 12.269 MHz, when they broadcast educational programmes, yet the signal is much improved from 1030 and it was possible to log and record a clear I/D. It can be classed as a utility station since it is not on an allocated broadcasting band and is on LSB. However, I was also fortunate to hear R Dif Nacional on 15.337 MHz AM on one day when signals from Europe were down (June 14th) at 0420 UTC with a concert programme by the Bogota Philharmonic Orchestra and a World News Summary, both in Spanish naturally. Power on this channel is 25 kW according to the WRTH, but it is notorious for variation in frequency.

Lately, Central and South American stations on the 49 and 60 metre band have been coming in quite strongly. Radio Reloj in Costa Rica is being heard here on two frequencies, 6.006 and 4.832 MHz. It is only a kilowatt yet puts in quite a respectable signal. At 0608 UTC, I was able to hear both channels, yet 6.006 MHz was copyable for longer as it was observed as late as 0935. Other Latins included Radio Super on 6.065 MHz at 0632 in Spanish, Radio Cadena Nacional in Granados, Colombia, on 6.160. Recording of the World Cup soccer match between Italy and Peru was heard from Radio America in Lima on 6.010 MHz at 1056 UTC.

Other 60 metre channels included Radio Lara on 4.800 at 1011. It signed on at 1001 with the National Anthem of Venezuela, followed by a frequency list and I/D in Spanish. The WRTH said it was located in Barquisimento and is rated at 10 kW. There is heavy RTTY QRM on the channel making reception difficult at times. The other presumed station is Radio Libertad de Junin in Peru on 5.040 MHz at 1015 UTC. We didn't have sufficient material to make a positive identification due to congestion around the frequency.

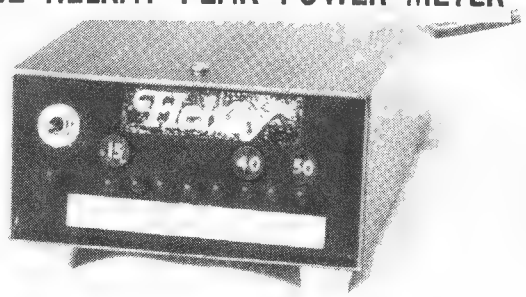
CONCLUDING

In conclusion, I would like to recount an amusing sidelight when I was DXing with a friend. We came across an unidentified station on 11.610 MHz at 0129 UTC on the 19th of June. The station was playing rock and popular music for over an hour without any announcement or I/Ds. Our first thought was that we had come across one of those European "FREE" radio stations, as the only outlet we could find listed was not supposed to be operational at that time. We checked the External Service of that known user but the programmes were different. So we waited patiently. At last at 0200 we heard the I/D and it was Kol Israel in Jerusalem. We should have deduced by the World News that Israel's invasion of Lebanon would mean that the Home Service would be staying on the air to pass the latest news on the situation. The non-appearance of the announcers being due presumably to the observance of the Jewish Sabbath.

Well, that is all for this month. Until next time, the best of DXing and 73. Robin. ■

NEW DESIGN

THE HELRAY PEAK POWER METER



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- First ever non-laboratory indicator for true, instantaneous peak output.
- No meters or screens to watch or interpret.
- No more guesswork
- Unambiguous over limit indication.
- Amateur — CB — Commercial Application.
- Good to over 80 MHz
- Three Ranges:-5-40W pep in 5 watt steps; 25-200W pep in 25 watt steps; 150-500W pep in 50 watts steps.
- Completely self contained.
- Calibration or checking with inbuilt DC supply.
- Costs only a fraction of the oscilloscope method.
- Based on the novel system proposed by VK3AFQ.

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2 METRE MULTI-MODE PORTABLE

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- 144-148 MHz, up to 4000 channels
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- LCD Display, 5 memories plus scan
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ORDER YOUR C-58E NOW

Price: **$319** **($8 P & P)**

C-900
VHF FM TALKMAN

- Provides hand free communications
- Range up to 1 km
- Easy to use with half headset and boom-mike
- Lightweight, 250 grams
- DOC approved, operates in 55 MHz band
- Thousands of applications: firefighting, security, antenna installations, car clubs, factories, search and rescue, hang gliding etc.

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W0802

COMMERCIAL CHATTER

AROUND THE WORLD BY HELICOPTER

In August, Dick Smith, amateur, owner of a well known electronics chain and adventurer of note, will set off from Fort Worth, Texas, in a Bell Jetranger Helicopter to fly around the world.

Dick has radio equipment on board and anticipates being on air every day talking to Australia.

VK2DIK HELICOPTER MOBILE

EQUIPMENT
Collins HF 220 upper sideband only.

FREQUENCIES
80 Metres —3.75 (USA and Canada contacts).
40 Metres — 7.060.
20 Metres — 14.250, 14.140* (Canada and Australia).
15 Metres — 21.285, 21.265*
* Secondary frequencies.

APPROXIMATE DATES
Fort Worth: 5/8/1982.
New York: 8/8/1982
Greenland: 14/8/1982
Iceland: 15/8/1982
United Kingdom: 19/8/1982.
London to Sydney: 12/9/1982 to 3/10/1982
Sydney to Fort Worth: Dates to be announced.

Flights will take place during local daylight hours, normally in the morning.

IN SEARCH OF NEW AMATEUR PRODUCTS

Greg and Martin next to one of MFJ's production lines. Stacked up on the line are some MFJ-989 3 kW Roller Inductor Tuners.

Recently Greg Whiter VK3CA, Managing Director of GFS Electronic Imports in Melbourne, completed a trip to both the United States and Japan.

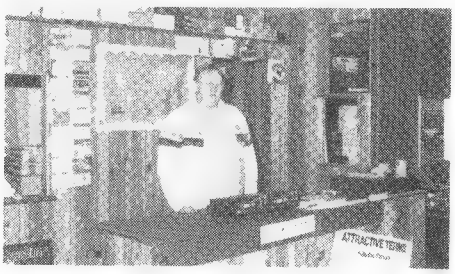
During his visit to the USA Greg visited a number of the companies that GFS represent here in Australia. Included in this list was MFJ Enterprises, manufacturers of a wide range of amateur products.

MFJ Enterprises is located at Starkville, Mississippi, which is a small town centred around Mississippi State University. It has a population of 15,000 people which doubles during the months the University is in session

The Company was started a few years ago by Martin F. Jue (hence the company name MFJ), then a lecturer at Mississippi State University. His first product was an audio filter. Since those times MFJ Enterprises has grown very rapidly to the point where they are now virtually a self sufficient manufacturing organisation. On their premises they manufacture everything from the cases that their products are housed in to their own typesetting and printing.

Well known in Australia is MFJ's wide range of antenna couplers, electronic keyers and audio filters. Recently out of MFJ's research and development section is a new range of video products which could hold a wide interest for those amateurs active on ATV. ■

UNDER NEW MANAGEMENT



Photograph shows Keith waiting to serve
Photo courtesy VK3JH

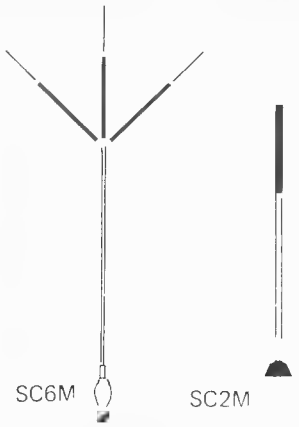
Many people would be familiar with the name Keith Haslam VK3ACE. Keith has been employed by Eastern Communications Centre in Victoria for many years. Keith was sub-contracting service technician at first but when the owner Fred Mackiewicz VK3ZZN established his own service centre Keith was appointed Service Manager.

Keith has recently purchased the firm and is rapidly expanding the range of goods and services for his fellow amateurs throughout Australia, but he will be continuing to service and sell at reasonable prices the wide range of amateur equipment that Eastern has been reputed for.

If one calls into Keith's shop in Box Hill South these days one will possibly find the shop full of workmen, as Keith is remodelling the premises and installing more shelving to further display his growing range of equipment and accessories. Also, as an enthusiastic "computer buff", Keith is hopeful that he may soon have a range of computer accessories for sale.

Further information may be obtained by calling in for a chat with Keith or his staff at 168 Elgar Road, Box Hill South 3128, or ring (03) 288 3107. ■

H.F. MOBILE ANTENNA SYSTEM
SC-00-R SERIES – TRI BAND



SC-OO-R Series
Choice of two masts – 6M or 2M Bumper or guttergrip mount – Single resonators for 80-10M operation. Triband operation without adjustment of antenna.

Communicate with SCALAR

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6ft Heavy duty fibreglass whips. High radiating efficiency.

Power: 100W Average
400W P.E.P.

	MHz
HA610T	28 – 29
HA615T	21 – 21.45
HA620T	14 – 14.35
HA640T	7 – 7.15
HA680T	3.5 – 3.70

W0819

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AR SHOWCASE

COMPACT RADIO TELETYPE AFSK MOD/DEMOD TERMINAL UNIT

The MDK-17 RTTY Mod/Demod Terminal Unit is designed for HF and VHF radio and/or commercial use at baud rates of 45 to 50 with a shift of 170 Hz, and with some component changes other baud rates and shifts can be accommodated.

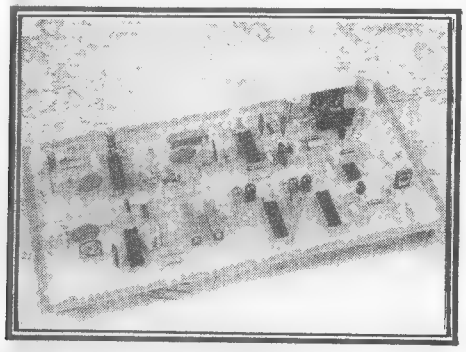
With 10 ports for all combinations of TTL and high voltage 20-60 mA send-receive systems, the MDK-17 has a unique design for simple transceiver, teletype or computer terminal hook-up. An open collector output allows for direct keying of HF transceivers.

To attain excellent temperature stability the tone generator uses an XR2206 IC and state-of-the-art circuitry throughout, including an XR2211 IC which combines both limiter and active bandpass filter in the one package. Accurate setting of tone frequencies and demodulator centre freqency is provided for by using 15 turn trimpots in these critical areas.

Other features of the MDK-17 include LEDs to indicate transmitted tone and correct receiver tuning, provision to invert signal sense in both send and/or receive modes, auto start output available to drive the TTL circuitry. The power source is derived from a single +12 volt supply.

The MDK-17 is available fully assembled, aligned and tested or as a complete kit supplied with a comprehensive easy to follow set of assembly instructions. (Approximately two hours is all that is required to assemble and test the kit.)

The MDK-17 is available from GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone (03) 873 3939. Telex: 38053 GFS. ■



DIRECTIONAL ANTENNAS

A new series of yagi antennas designed specifically for use on the 400-520 MHz band with gains from 3 to 14 dB have just been released. The antennas are designed to provide economical and effective operation for point to point communication applications.

The yagis, manufactured from high grade seamless aluminium tubing, feature a 4 per cent bandwidth at VSWR of 1.5 : 1 and VSWR 1.3 : 1 at centre frequency. A cable tail to N type female termination is provided.

Also released is the RF control model Y415PT, which fully conforms to draft specification RB234C.

It is a 15 element yagi with multi-element reflector. Side-lobe levels at any angle greater than 55 degrees from the centre of the main lobe will be at least 17 dB below the forward gain.

The antenna can be supplied for end mount or with a centre mount elbow.

For further information about this and other antenna information, contact Scalar Industries, 20 Shelley Avenue, Kilsyth 3137. Phone 725 9677. ■

STANDARD 2M METRE MULTI-MODE PORTABLE

Just released from Standard Radio, the communication division of Marantz Japan Inc., is a new multi-mode 2 metre transceiver.

The new transceiver, known as the C-58E, has many outstanding features. The main one is the size of the unit, which is excellent for portability. Some of the other features are 5 memory channels with frequency and mode storage,, liquid crystal display, RIT for SSB, built-in battery or external power source, noise blanker, ± 600 kHz repeater offset, memory or band function, high sensitivity cascade FET RF amplifier, 1 watt RF output on FM and SSB, coverage up to 4,000 channels from 144 to 148 MHz, and a wide choice of channel steps (25 kHz, 12.5 kHz, 5 kHz, 1 kHz and 100 Hz).

The C-58E weighs 1.25 kilograms, without battteries, and measures 129 (W), 52 (H) and 190.5 (D) millimetres and comes complete with carry-strap, rubber duckie antenna and mike containing a charge switch.

The first shipment of C-58Es as anticipated arrived around mid-June and is expected to sell like "hot cakes".

For further details contact the distributor, GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. ■

When You Buy Equipment

Say You Saw It In

AR

BOOK REVIEW

Jack O'Shannassy VK3SP
23 McGorvans Road, Donvale, 3111

HF ANTENNAS FOR ALL LOCATIONS
By Les Moxon G6XN

At last the long-awaited book on HF antennas has arrived — and it has been well worth waiting for. Regular operators on the 20 metres Long Path to England will have heard Les for many years now talking about antennas and carrying out tests on his various designs with the aid of his many friends in VK. All who have listened to him will have formed a high opinion of his knowledge on this, often controversial, subject and will have become aware of his many unorthodox views on the subject.

An indication of the wide-ranging nature of the book can be gleaned from a perusal of the chapter headings:—

TAKING A NEW LOOK AT HF ANTENNAS.
WAVES AND FIELDS.
GAINS AND LOSSES.
FEEDING THE ANTENNA.
CLOSE SPACED BEAMS.
ARRAYS, LONG WIRES AND GROUND REFLECTIONS.
MULTI-BAND ANTENNAS.
BANDWIDTH.
ANTENNA DESIGN FOR RECEPTION.
THE ANTENNA AND ITS ENVIROMENT.
SINGLE ELEMENT ANTENNAS.
HORIZONTAL BEAMS.
VERTICAL BEAMS.
LARGE ARRAYS.
INVISIBLE ANTENNAS.
MOBILE AND PORTABLE ANTENNAS.
WHAT KIND OF ANTENNA?
MAKING THE ANTENNA WORK.
ANTENNA CONSTRUCTION AND ERECTION.

Most chapters are supported by a list of references from both amateur and professional sources for those who wish to pursue a particular subject in greater depth. Frequent credit is given throughout the text to contributions by other amateurs, including many VKs. Reference is frequently made to the antenna requirements for the new WARC bands.

The book, as the title indicates, confines itself to HF antennas, gives particular emphasis to the question of size, weight and cost reduction and qualifies the effect of these reductions on performance. This to my mind is the outstanding feature of the book. It effectively disposes of the often exaggerated claims made by antenna manufacturers and, in particular argues against the use of traps in multi-band antennas both because of the loss they introduce and because their use means that the full length of the lowest frequency elements is not used on the higher frequencies with a consequent (and unnecessary) loss of performance on the higher bands. The author further argues that a reduction in size and weight often allows the antenna to be mounted at a greater height with an improved performance — again he qualifies his argument.

Another interesting and challenging approach relates to the important role seen for vertical beams, which the author considers have not been suitably covered in other literature. In locations where height restrictions are severe, he considers that the improved vertical designs he proposes, together with simpler and more efficient methods of feed, can result in reasonably competitive DX performance. This approach, together with his claim that the poor reputation of verticals as receiving antennas, is unwarranted and due mainly to noise pick-up by incorrect transmission line and radial system design will be of interest to users of all HF and MF bands, particularly for those interested in the lower frequency bands. Further, he argues that not only are extensive radial systems not necessary, but that improved performance can be obtained using smaller ground systems of appropriate design.

In keeping with the title, the adverse environmental conditions under which many amateur antennas must operate are considered and methods recommended for minimising the adverse effects. In the same chapter, information is given on how to take advantage of favourable sites such as sloping ground and seaside locations, including formulae and graphs which qualify these factors. Suggestions on the choice of sites for mobile and portable operation are also given.

In the experience of the reviewer, this is the first book on HF antennas which marries the needs of the amateur to the extensive professional literature on the subject which, in general, takes little account of the need to conserve size, weight and cost, nor the need to operate on several amateur bands from one antenna. In particular, much of the earlier work on reduction in element size for the LF and MF bands has been translated to HF aid adapted to meet the specific needs of the amateur service.

Those operators who have spoken on-air to Les over the years will have heard him refer frequently to his ideas on "chordal hop" as an explanation of the very good propagation which is so frequently observed (albeit for short periods) on the 20 metres Long Path between Australia/New Zealand and the United Kingdom. Calculations are given which show that the attenuation under these conditions approaches that of free space. One of the few errors in the book appears at this point but fortunately it does not invalidate the argument.

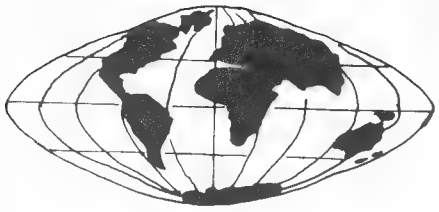
Having referred to a few of the many good features of the book, in all fairness to the widely varied interests of AR readers, I feel that I should refer to some things that the book is not. It is not an "antenna cook-book" with a series of "how-to-build" articles. While there are some detailed constructional designs, the main emphasis is not on "how" but on "why", together with the conditions which need to be met to achieve good results — the details are left to the ingenuity of the reader. Most of the designs given have been tried and tested by the author or his colleagues, but others are theoretical or even speculative and their practical implementation and testing are left to the individual constructor. On the other hand, many of the designs are highly novel and intriguing and would be well worth pursuing by the experienced amateur.

The book contains a sprinkling of mathematics which the author claims need not be followed to understand the text. However, there is no doubt that a careful following of the various equations and formulae helps in understanding the text. The maths are confined to the minimum necessary to cover the issues under discussion, requiring a knowledge of algebra, trigonometrical functions and complex numbers. Differentials, integrals and hyperbolic functions so frequently used in professional papers have been carefully avoided.

In summary, this book is one which every serious antenna experimenter and those interested in HF propagation should have. It may not be so valuable to the beginner, but a serious student would undoubtedly learn much from a careful perusal of it.

The book is published by the RSGB and follows the format and style of the recent edition of the popular RSGB "Radio Communication Handbook". Its 260 pages are very well illustrated with clear diagrams, tables, graphs, circuits and a few black-and-white photographs. At an English price of £5.00 (Australian price not yet known) it is excellent value. Copies will be available shortly through the Divisions and Magpubs, and no doubt it will appear in the technical book shops in due course. ■

BUYING OR SELLING GEAR?
HAMADS
MAKE IT HAPPEN FAST



VHF UHF - an expanding world

Eric Jamieson VK5LP
1 Quinns Road, Forreston, SA 5233

AMATEUR BAND BEACONS

Refer to list in June issue.

A letter from Karl VK6XW from Albany, WA, advises he has now been appointed beacon officer for the Southern Electronics Group in Albany, and submits details of changes being made to their beacons.

The original 6 and 2 metre beacons had to be closed down at the request of "the landlord" and arrangements have been made to open the beacons again using a site at the old whaling station right at the water's edge about 10 metres above sea level, with a good take-off to the east and north. There have been some problems with power supplies but these are being ironed out.

Changes being made are for new frequences of 52.465 MHz into a coaxial ground plane with 10 watts. 144.465 MHz with 6 watts east into a six element beam and 4 watts north into a 4 element beam. 432.465 MHz with 10 watts with the antenna undecided yet. In addition there will be a beacon on 28.266 MHz from a converted CB set into a vertical dipole. All crystals have been ordered but the 432 and 28 MHz beacons are not yet ready.

The original call sign of VK6RTW will be retained for all the beacons from a common keyer with 800 Hz downshift FSK. At the time of writing the beacons are not on the air but advice will be sent as soon as they start.

That's a very comprehensive array of beacons from one of the more prime areas of Australia so on behalf of the amateurs of Australia I wish the Southern Electronics Group and its band of workers every success. Incidentally, the above frequency changes conform to the Australian band plan.

Although not strictly beacon news but of considerable interest is the news from Joe VK7JG of VK7RAB, a UHF repeater for Launceston operating on 433.625 MHz input and 438.625 MHz output, power 10 watts with a vertical antenna having 6 dB gain. The unit is a modified Icom IC400 mobile, set up by Joe and Phil VK7JJ. Initially it is being located at "7EX" hill, about 7 km east of Launceston, and could hopefully act as an indicator of possible 70 cm openings between Tasmania and the mainland.

Gil VK3AUI reports Rob VK3XQ has been running a manned keyer or CQer often around 52.036 MHz and on 2 metres, and has stirred up quite a bit of DX as a result. If you call Rob he will be available to answer you, and would welcome any reports.

THE SIX METRE SCENE

Band conditions have not been over bright, which is not unusual for the time of the year. A late report to hand from Joe VK7JG advises as long ago as 17/4/482 at 2230Z he put out a call on 52.050 without really expecting any replies and was surprised to be answered by W5FF on CW, who was 519 at Joe's QTH and gave a return report of 2 x 2. Three days later a QSL card arrived and the distance turns out to be about 300 km further than XE1GE which, although not an Australian record, may well be for Tasmania.

From Bill W3XO of "The World Above 50 MHz" in QST comes a report of good spring (US) propagation when, during April W5UWB in Texas worked six new countries to bring his tally to 43 confirmed. Latest workings include LU3EX, LU8YYO, LU4VBY, 3D2JT, PJ9EE, HC1MD/5, OA4AWD, ZL1MQ, A35JT, FO8DR, AH8A, H44PT, ZL1AKW, FK8CR, VK2DDG.

WA8LLY/6, from Santa Rosa, north of San Francisco, reports 3rd April as the best day he has ever had for hearing South Pacific contacts. After an LU opening, Steve said FO8DR and 3D2JT appeared, followed by YJ8RG, H44PT and T32AB. Signals were so strong on 50 MHz he decided to try 52 MHz and heard VK9NS in contact with VK4AUV. At this time N6CT worked 14 VK stations.

Other snippets of news on 6 metres include Peter VK6ZDY working JAs on 10/6 and on 11/6 at 0400Z Channel 0, Brisbane, was very strong . . . VK3AUI and others working to ZL on 18/5 . . . 6 metres has been opened up to T calls in New Zealand recently and stations already active in ZL4 on that band now include ZL4CN, 4MB, 4LV, 4LT, 4KB, 4HR, 4LH, 4THO, 4TGT and 4TBN . . . JA4MBN had a field day on 22/3 when he worked VP2VGR, W2HOY/KP4, WD4IYS and FM7AD, quite an effort for one day's operating!

6 METRES FROM VK5KK

The month of May was rather quiet compared to April with respect to long-haul DX (or any other DX!). However, the mid-winter Sporadic E season has turned up this June, somewhat better than seen for some years. To top that off there has been some JA openings to VK5 and VK6, at least on several occasions during June.

On 10/6 VK6ZDY Perth worked JA on 52 MHz around 0900Z. 11/6 VK6RO heard VK5VF beacon on 53 MHz at 5 x 7-8 at 0700Z. Also hearing Channel 0 sound (possibly Melbourne). On 12/6 very good openings between VK3 and VK4, VK5 to VK2, then VK5 to VK4, 7 and VK3 on backscatter from 0230Z to 0400Z. K5ZRO worked VK3XX and VK3YTT on backscatter. VK4ZEI was 5 x 9 at this QTH using only 2 watts to a ground-plane. On 14/6 the band was open to VK2 then VK4 (Townsville) around 0300Z. At 0530Z VK6ZDY and VK6YU were both 59 + into the Adelaide area. Quite a bit of backscatter evident on local signals.

On 26/6 band open to VK2, 4, 6 from 0530Z to 0700Z to VK5. Interesting to note also on 14/6 VK6YU was copying Adelaide FM on 93 MHz at 0600Z. However, no signals evident higher up. Also from the west, Peter VK6ZDY mentioned that an experimental repeater is being tested at Tic Hill (same location as 2m repeater). At this stage it uses 600 kHz offset (53.2 MHz in and 53.8 MHz out). Power at the moment is 10 watts. Could be useful during the summer season. All of the above represents the openings I caught up with, not bad conditions for winter at all.

Also on 26/6 band opening on 50 MHz from VK5 to JA (all areas) at 0730 to 0820Z, but only JA8 on 52 MHz, 5 x 3 signals.

THE TWO METRE SCENE

Heading the list of course must be the efforts of Steve VK4ZSH/4, who was sculling around the northern parts of Queensland and working JAs on 144 MHz! Details as follows — 4/5/82: 1032 to 1107Z four JA1s with JA1RJU being the first VK to JA1 contact. At the time Steve was located at Karumba near Normanton in the Gulf country. 6/5: 1034 to 1125Z worked 18 JA1s whilst 110 km south of Karumba. 7/5: 1047 to 1057Z, two JA1s and JA7OXL, the latter being the first JA7 to VK; location 250 km south of Karumba. 8/5: 1007 to 1047Z, 16 JA1s, four JA7s from Cloncurry. Very hard to work stations, such incredible dogpiles and severe QRM!

Congratulations, Steve, for making the effort to work these stations and indicating to the multitudes just what can be done on VHF if you try. Thanks to Lionel VK3NM for sending this news along from Steve.

Although a bit late, but nevertheless still of interest, is the report from Joe VK7JG who was working VK4KMD on six metres on 5/2/82 when they decided to try two metres and were delighted to exchange 5 x 5 and 5 x 3 reports. Joe was running 10 watts to two half-waves in phase on the side of his tower and 3 metres high! He also worked VK4XT on SSB, and other stations through VK4RDD, the Darling Downs repeater.

BREAKING RECORDS IN NEW ZEALAND

From "Break-In" April 1982 comes a report of no less than five VHF records being

broken with details as follows: ZL1BJB and ZL1THG were located at Cape Reinga, the tip of the North Island, for the DX weekend of 30/1 and 31/1. The southern team were located at Mount Burnett and were headed by ZL2ARW, and contacts were made as soon as the 2 metre equipment was going. Signals were strong and soon signals were being heard on all bands. Careful alignment on 1296 MHz brought good signals both ways, and a one way signal on 2300 MHz. The same evening ZL1BG worked ZL2BW on 70 cm to extend the existing record, then on Sunday afternoon ZL1BJB worked ZL2BMA to further extend the record. Peter and team then drove further south to Westport then to Knights Point, again extending the distances.

The weather conditions on DX weekend were excellent for long distance contacts, even though not a great number of stations took part. After ZL2ARW and team left Knights Point they drove to Christchurch to try to work ZL2TWS located on Mt. Ruapehu, central North Island, this time via ATV. They were not successful but did work ZL2TAR.

A further record was broken when ZL2TWS worked ZL2ASF in Motueka on ATV over a distance of 383 km.

The records claimed were therefore:—

144 MHz: ZL2ARW to ZL1BJB 1050 km.

432 MHz: ZL2ARW to ZL1BJB 1050 km.

1296 MHz: ZL2ARW to ZL1THG 675 km.

2304 MHz: ZL2ARW to ZL1THG 675 km.

ATV 440 MHz: ZL2TWS to ZL2ASF 383 km.

While still on the two metre scene, a report from New Zealand indicates G3VFY in Essex worked 4X4IX in Tel Aviv on 144 SSB for a distance of 3,544 km, while G8PWX in Tynemouth made the first two-way RTTY with Norway when he worked LA3EQ over a 660 km path. Finally, PA0SSB made the first 2300 MHz contact via moonbounce to W6YFK, no other details available at the moment.

2 METRES FROM VK5KK

The large stationary High Pressure cell over the south-east of Australia during early June brought some good tropo conditions from 3/6 to 9/6. On 3/6 Ballarat, Channel 6 TV, was almost snow-free from 0800Z to 1100Z, despite a very strong local Channel 7 (which had some co-channel interference, too). Mt. William, Channel 7, repeater very strong. Heard VK3KTL working VK3KOZ (locations?) at 1100Z at 5 x 2 on 144.1 MHz. Very strong local (Whyalla, Mt. Gambier!) signals. Conditions next peaked on 6/6 with Channel 7, Mt. William, and Channel 5, Mt. Macedon, repeaters at good strength, at 2300Z to 0300Z and then again at night. Also Channel 1 at Mt. Wombat was workable from 0130Z to 0300Z. Mt. Wombat is 35 miles south-east from Shepparton, call sign VK3RGV, 2,600 feet ASL. Not bad for this time of year. Unfortunately not a great deal of SSB activity on the low end. On 8/6 Ballarat TV almost snow-free again at 1000Z. Also coldest Adelaide day (—0.4 degrees C) on 8/6, but by 9/6 High Pressure cell had finally moved bringing an end to freezing weather and DX.

TOURING THE COUNTRY

As I write these notes I am sitting in my caravan in the caravan park at Exmouth, right up near the North West Cape Communications Centre in Western Australia. Being a weekend I won't be able to have an escorted tour over the big radio station whose 13 very high masts I can see in the distance. However, tomorrow I hope to meet Steve VK6ASF, who lives here and who USED to operate on 2 metres. In fact, the closest thing to any VHF signals in this place are a few splashes of signals from Indonesian TV (well, that direction anyway, not enough signal to identify!).

In fact, the measure of activity on 2 metres or any other VHF band along this portion of the west coast of WA above Perth and so far to Exmouth has been minimal. I did catch up with Jim VK6KJN in Geraldton, who lives in one of the caravan parks in that town, and found most of the 2 metre activity is confined to Channel 50 and then very spasmodic.

The highlight of the trip so far was to meet up with Andy Hemus, who is now back in Carnarvon and sporting his old call again of VK6OX after spending some time at Kyogle, NSW, with the call of VK2DUX. Andy welcomed me with open arms and we had quite a long natter on the subject of VHF, ultimately leading of course to a most descriptive tour of the OTC installation and the 26.5 metre dish antenna, with Andy acting as a most informative guide.

Andy has now moved into his permanent house at last and will soon be erecting antennae to get back on the air and, from the superb location that Carnarvon offers, we should be hearing of his exploits again soon. If his presence does nothing else it must help to stir up a bit of VHF activity up and down the west coast of the State, and this will be a good thing for the hobby.

As I continue on my tour around Australia I want to call and see VK6ZIT in Derby, John VK6ZOJ in Dampier, John VK6GU in Wyndham (who recently has made contact with Japan on 2 metres) and of course Graham VK8GB in Darwin. These are just for starters. I will try and bring you some news of what they are doing in the September issue. I was unfortunate to miss out on seeing Tony VK6BV in Northam, but circumstances did not allow contact to be made.

I have asked David VK5KK to fill you in on the local scene during my absence and the intention is for the Editor in Melbourne to "marry" the two sets of notes together to make one hopefully successful narrative! I am keeping in contact with David VK5KK through weekly skeds on HF, having an FT7B and mobile whips with me, so I am not too far from the general scene despite moving around. The people staying in my house are forwarding my mail at regular intervals, so any letters having been forwarded in the interim will not be left home going stale! Hence those of you good enough to write will still be acknowledged through the columns in the usual way! So much for dedication to the cause!

70 cm AND ABOVE FROM VK5KK

Mostly local activity, with VK5ZRO at the forefront of the activity with his nightly contacts to Whyalla (over 250 km) on 437.1 MHz SSB. Reason for such a frequency relates to a simple "TVI" problem, almost anybody in the Adelaide area on 432 MHz upsets the local 426.25 MHz ATV repeater!! As with other TVI problems, it would seem that the good location of the repeater plus poor front-end selectivity does not like even 10 watts of SSB 16 km away. I have been dabbling with a bit of ATV lately and can manage good signals from Bob VK5ZRO, who is 110 km away at Elizabeth. Bob is currently working on 1296 MHz SSB gear and hopefully 24 cm ATV gear soon. Other ATVers are looking toward 24 cm ATV, but at this stage some standard channel system would be helpful. A good magazine covering 24 cm ATV recently is the one put out by the British ATV group (BART).

At this stage I am running 25 watts SSB on 1296 MHz (transceive). My location is ideally located to the south-east (being 120 km from Adelaide Hills). I hope to work further than Millicent (420 km) next summer. At this stage I have just been in contact with Eric VK5LP, at Exmouth, on 7 MHz. From the sound of things all is well on his around Australia trip. Hopefully I will have more next month, as things always seem to be VERY busy in June, keeping my operating hours down to the minimum.

CONCLUDING

Having now put you in the picture, that's about all the news for now. VHF equipment with me consists of a TS7800 and an IC502, the latter so far not having been used. I did want to bring 2 metres SSB but the lack of room to stow a 2 metre beam made the exercise impracticable, so I have had to be content with 2 metres FM and the usual whip antenna.

Closing with the thought for the month: "If your efforts are sometimes greeted with indifference, don't lose heart — the sun puts on a wonderful show at day-break, yet most of the people in the audience go on sleeping."

73. The Voice in the Hills.

REMEMBER
REMEMBER
REMEMBER !

AX PREFIX

Don't forget you can use the prefix AX instead of VK for the period

15th AUGUST 1982

to

15th OCTOBER 1982 inclusive

to mark the occasion of the Commonwealth Games in Brisbane.

CLUB CORNER

OXLEY REGION AMATEUR RADIO CLUB

AMATEUR RADIO CONVENTION

The Oxley Region Amateur Radio Club held its 11th annual convention and field day in Port Macquarie over the Queen's Birthday weekend.

A big crowd, made up of local club members and visitors from many parts of NSW, attended and enjoyed the extensive programme of events.

President of the Wireless Institute of Australia (NSW Division) ,Sue VK2BSB, and Secretary, Athol VK2BAD, were welcomed by local Club President, Bill VK2ZCV.

Congratulations were extended to Sue on her appointment to the top executive position of WIA, NSW. It was also pointed out that she is the first woman to ever occupy the position of President in the Institute, the oldest of its kind in the world.

NEW EVENT

A "Home Brew" receiver building contest was an additional event on this year's programme. The receiver had to be designed for use on any of the amateur radio bands and constructed from parts which were reosonably and/or commonly available.

Local radio amateur Col VK2VQT was judged the winner of the event and was presented with a grid dip meter donated by the Trio-Kenwood Company. The sales manager of Trio-Kenwood, Mr. Sandy Brucesmith VK2AD made the presentation to Col and congratulated him on the workmanship and performance of his home-made set.

Col VK2VQT (left) receiving his "home-brew" prize from Sandy VK2AD.

CW CONTEST

Once again this Morse code receiving contest proved a popular and interesting feature of the programme of major events. The winner of the 25 w.p.m. section was Lester VK2KT, from Taree. Great performances were turned in by all contestants, particularly Bill VK2WC, of Wauchope, and Eric VK2BEK, also from Taree. Lester commented that he was somewhat relieved that last year's winner, Peter VK2PA, and his wife, Ina, were presently over in London on holidays!

Winner of the 10 w.p.m. section was a very excited Debbie VK2EYL, from Tamworth. Debbie turned in a near faultless result and she also gained a notable place in the Fox Hunt events held during the day.

RESULTS

Winners in the other main events held over the two days were:—

FOX HUNT:
1, Kevin VK2KKW, from Normanhurst; 2, Athol VK2BAD, Sydney; 3, Sue VK2BSB, Sydney.

Athol VK2BAD accepting his prize for the Fox Hunt from Club President Bill VK2ZCV.

OLD GEAR DISPLAY:
Brian VK2DLM, of Urunga, with a 1926 model Attwater Kent seven valve set.

FULL CALL QUIZ:
Sue VK2BSB

GENERAL QUIZ:
J. Savins (Swansea)

LADIES' 80M SPRINT AND
LADIES' RADIO THROW:
Lee Barry (Padstow)

GENTS' 80M SPRINT:
Ray VK2BRG (Coffs Harbour)

GENTS' RADIO THROW:
Bruce VK2VRG (Fairfield)

APPRECIATION

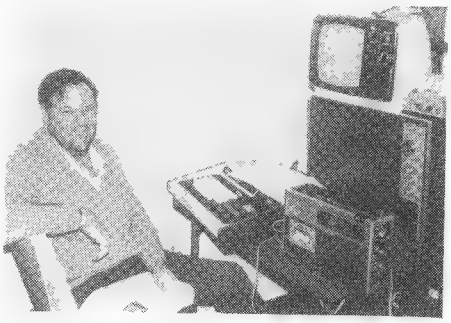
President Bill VK2ZCV expressed his appreciation to other donors of prizes and made special mention of Mr. John Smith's mobile museum from the award winning local firm Century of Sound.

He also thanked all persons and firms who made available the many interesting displays of surplus gear and new equipment, which drew continual patronage throughout both days.

COMPUTERS

The boys from the Hastings Computer Club operated non-stop and kept children and adults enthralled with various games and demonstrations on the computer.

President of that club, Neville Joyce, of Wauchope, was kept busy answering questions and providing the latest information available in the new world of computer age.



Computer Display with Neville Joyce of Hastings Computer Club.

Likewise, Dave Hall, from the local firm Hall of Electronics, held a fascinated audience with a computer chess exhibition.

PLENTY TO EAT

The hard working girls of the kitchen drew praise and appreciation from all with a masterful presentation at smorgasbord and lunch times. It was a big effort to cater for such a large crowd in this regard, as well as keeping up a continuous morning and afternoon tea service.

Members of the Oxley Region Amateur Radio Club were more than amply rewarded with great weather and probably the most successful amateur radio convention ever held in Port Macquarie. ■

WAGGA AMATEUR RADIO CLUB

We have often read reports of amateur radio conventions around the Country. This is great except that you always read about it after the event. In other words, all the fun is over. You read of hidden transmitter hunts, sight-seeing, new and used equipment at bargain prices, meeting up with old friends, prizes being won, banquets, and you think to yourself "I wish I had gone to that", but it is always too late. Well, we down in the south-western part of the bush have decided that you are not going to suffer this problem with the SWARS Convention. We are going to give you the news before it happens, that way you will know what you are going to miss out on. But first, some history on our Convention and who we are.

The "South West Amateur Radio Society" is an organisation formed to foster amateur radio and fellowship in the south-west zone of NSW. This area extends from Albury to Young and from Mildura to Goulburn. Each year the Society conducts a Convention in one of the many cities or towns within its area. An obvious measure of the popularity of the Convention is that

this year will be the 30th anniversary of the Convention. That makes it one of the longest running events in this State. This year Wagga Amateur Radio Club will act as hosts for the Convention and therefore it will be held at WAGGA WAGGA.

The city of Wagga Wagga comprises a population of some 50,000 and is situated on the bank of the Murrumbidgee, 500 km from Sydney and 400 km from Melbourne. There are numerous points of interest for sight-seeing, modern motels, shopping complexes and all the things one would expect from one of NSW largest provincial cities. The Wagga Club have chosen for the Convention site, the "Borambala National Fitness Camp" complex. This site is situated about 15 km from the city and would have to be one of the best Convention sites anywhere. It is controlled by the Department of Sport and Recreation and is not unlike an "American Summer Camp" to compare with. There is ample parking for cars and caravans. The facilities include Convention halls, catering centre, amenities, accommodation rooms, sporting facilities for tennis, swimming, archery, canoeing and nature reserves. Participants in the Convention would be able to bring the entire family for a super holiday and be assured of a great time. The advantage of having accommodation rooms at the site is a big plus on its own.

The Convention Site

Also there are big plans in the wind for the Convention itself. A scheduled programme will include competitions, talk-ins, scrambles, hidden Tx hunts, pedestrian hunts, demonstrations of ATV, computers, auction sales and trade displays. We would advise anyone coming to our Convention to bring some Tx hunting gear. There will be prizes for winners and the boys at Wagga really know it all when it comes to hiding transmitters. It has been known to find them in hollow guide posts on the side of the road, high up in the trees, under a rock in the middle of a creek and once one was found under a dead cow. On the social side a genuine bush banquet is being planned, complete with entertainment, which should be a real spectacle in itself.

Preliminary details can be obtained by writing to the Wagga Amateur Radio Club, PO Box 71, Kooringal, NSW 2650, or contacting Jeff VK2CET. The dates for the Convention will be 2nd and 3rd October, 1982, and already the Wagga Club, of which there are over 50 members, are working on the final details. Little items such as the talk-in frequencies to be monitored on day one have been decided. These are 28.490, 7.115, 3.610, 146.750 (Channel 3 repeater), 146.500 (Channel 50).

So if you feel you would like to get out into the country and meet some friends where the air is clean and the grass is green, then Wagga and the SWARS Convention would be a great place to go.

VK2DOL. ■

FORWARD BIAS

VK1 DIVISION

B. Bennetts VK1BB
48 Chuculba Cres., Giralang, ACT, 2617

NEW RADIO CLUB

A new Radio Club has been formed in Canberra, mainly due to the inspiration of the new International Chapter of 10 x 10, "Australian Capital Chapter". The Club, aimed at the Handicapped, is known as the Woden Valley Hospital Radio Club, and was opened by the Minister of Health on Wednesday, 14th July.

The formation and continuing efforts directed in this venture will be by harmonious co-operation of three fraternities — 10 x 10 International, CB Groups AND THE WIA, proving that "communication" is the key-word for success. Incidentally, the Club call sign is easy to remember — VK1 Woden Valley Hospital.

NEW CALL SIGNS

Two other call signs have been allocated to Clubs in VK1 in recent weeks. They were:—

VK1 Royal Australian Navy, the official call sign of the ACT Division of RNARS.

VK1 Australian Capital Chapter. The Club call sign of the ACT 10 x 10 Chapter of 10 x 10 International.

PHONE No.

VK1 WIA now has an official telephone number. The number is 41 3889.

POLES!!!

VK1 amateurs are taking full advantage of being able to purchase damaged aluminium columns (street poles) from the ACT Electricity Authority. At only $30 each, plus a small charge for delivery, several ingenious and incredibly cheap antenna towers are sprouting up around Canberra. It is becoming difficult to differentiate what is an "official light pole" or "amateur tower", as the towers blend in beautifully with the Canberra landscape. "WHERE THERE IS A WILL, THERE IS — END." ■

QSP

WOODPECKER PROLIFERATION?

According to Ham Radio, April 1982, the USA will begin an OHR system some time this year, operating with an ERP of 1.2 mW from a location near Moscow in Maine and sweeping from 5 to 35 MHz. The short article includes a promise that the military will work in with the amateur community to reduce its impact. ■

Federal VK9-0 QSL Bureau

Neil Penfold VK6NE
388 Huntriss Road, Woodlands 6018

The WIA maintains a Federal QSL Bureau service for members' incoming cards at 388 Huntriss Road, Woodlands 6018, West Australia. There is no outwards Federal Bureau, as each Division of the Institute handles this operation.

Amateurs holding a VK9 or 0 call sign are eligible to join a Division and utilise that Division's outward QSL Bureau. In some Divisions this is a free service, in others a small charge per card is made to defray expenses.

Many operators using a VK9 or 0 call have done so for only a short time. Antarctic personnel usually stay there for around 12 months before returning home. If their home call is known then their cards are forwarded to that Division, e.g. VK0HW is a VK7 when at home, so his cards go via the inter-divisional QSL mail service. Some VK9 operators have their cards dealt with in a similar manner. Should a Manager have been appointed, then cards are sent to the Division in which the Manager resides, e.g. VK9ZR, Mellish Reef cards, the Manager is Harry VK2BJL, so cards for VK9ZR go to the NSW Division.

In the event that neither the operator nor Manager are members of the WIA, then arrangements must be made for the onforwarding of cards. This is usually done by the operator or Manager paying the postage costs involved.

Under IARU Rules, Divisions are quite within their rights to refuse to handle non-members' cards. However, a proviso has been attached to the Federal QSL Bureau for non-members' incoming cards: "Where the non-member pays the cost of postage, the cards will be forwarded to him."

The operations by VK9NS and VK9NL has caused a tremendous upsurge of cards received by the Federal Bureau for Norfolk Is., to the extent that a shoe box full are posted to Norfolk Is. on the average of once every six weeks, VK9NS has undertaken to pass on to the other islanders their few cards. This all helps to keep the Bureau clear of cards.

If you work a VK9 or VK0 with an overseas Manager, please indicate on back of the card. This will assist your Divisional Bureau to sort the cards and post them off to the Bureau in the country where the Manager resides.

A word of caution, the Federal Bureau receives quite a few VK9 and 0 cards for pirates or slims. It appears some small ships and yachts, among others, take advantage of the unique VK9 or 0 call sign and allocate one to themselves and use it whilst traversing the world's oceans and seas. ■

VK2 MINI BULLETIN

Athol Tilley VK2BAD
PO 166, Parramatta 2150

WE HAVE MOVED!!

NEW POSTAL ADDRESS:

PO BOX 1066,
PARRAMATTA 2150

NEW DIVISIONAL OFFICE:

109 WIGRAM STREET,
PARRAMATTA

COUNCIL REPORT

The NSW Divisional Council met on the 18th of June. A workshop session proposed by the Institution of Radio and Electronics Engineers (IREE) to consider the proposed Radio Communication Act was discussed and the WIA intends to submit a discussion paper and to attend these workshop sessions. Areas of particular interest concern a possible increase in interference between the various radio services and EMC considerations affecting the Amateur Radio Service.

DOC exam statistics indicating a poor result by NSW applicants at amateur exams was discussed and this situation will be raised at a proposed Sydney DOC-WIA joint meeting.

Council resolved to accept the offer to purchase 14 Atchison Street, Crows Nest, for $410,000 and confirmed the purchase of a new commercial office building at 109 Wigram Street, Parramatta, as the new Divisional headquarters. All assets and equipment currently at Atchison Street will remain on Divisional property, that is Parramatta or Dural. Any equipment surplus to WIA needs will be offered for sale to members of the Division.

The proceedings at the 6th Conference of Clubs, held on the 23rd of May at Revesby, were discussed. Council accepted the recommendation of the Conference that a State-wide common calling frequency of 28.490 MHz be adopted. The proposal that all items of agenda for future Conferences of Clubs should be accompanied by a brief explanation of intent, was noted. Council felt that the WIA had given reasonable publicity to the John Moyle NF Day Contest in past years and noted that the position of Contest Publicity Officer remained vacant. This position entails the generation of short broadcast items and other publicity that will make amateurs aware of the various contests, thus encouraging participation. Perhaps Affiliated Clubs have a member interested in this position. If you can assist, please contact the office.

A proposal that contests be restricted to certain parts of each band has been referred to the Federal Contest Manager. The proposal that amateur exams in all subjects be conducted quarterly will be raised with the DOC. The 7th Conference of Clubs will be hosted by the Westlakes Amateur Radio Club at Teralba later this year. Council has set a suggested date of the 31st of October, 1982.

The Shoalhaven Amateur Radio Club was successful in the ballot for the PYE UHF Repeater.

The Westlakes Amateur Radio Club made an additional submission concerning their proposed relay of the Divisional broadcast in the Newcastle area. Council resolved that Westlakes be permitted the conduct of a relay of the morning Divisional broadcast on a frequency of 3.585 MHz using a power of 10 watts. This will be for a trial period of 6 months, to be reviewed periodically.

HOME-BREW COMPETITION

HAS "BLACK BOX" OPERATION TAKEN OVER AMATEUR RADIO OR IS THE SPIRIT OF THE HOME CONSTRUCTOR STILL ALIVE? Acting on a recommendation of a previous Conference of Clubs, this Division is conducting a home-brew competition which has the object of fostering the technical and creative aspects of amateur radio.

Almost any amateur radio orientated project would be an acceptable entry. The project should be fully documented, i.e. accompanied by a circuit and block diagram, photographs, technical specifications, brief description of operation, etc., and should be in a complete operational form. There are three sections: (1) completely home designed and constructed, (2) home built from a published design, and (3) home assembled kit.

Judging will be by a panel of three judges provided by a local club. Projects and documentation are to be presented to this panel and the averaged assessment of marks and documentation will be forwarded to the Divisional Council. If you are not a member of a club or do not have a local club, three local amateurs can act as judges.

All entrants will be encouraged to submit a technical article on their project to Amateur Radio magazine.

The closing date is the 30th of November, 1982, and the completed entry form/marking sheet and documentation must be received at the Divisional Office by this date. Council will decide upon the winners at its December meeting and award presentations will be made at the Annual General Meeting of the Division in March 1983. Apply NOW at your local Affiliated Club for an entry form and copy of the rules or write to the Divisional office.

VOLUNTEERS REQUIRED

The Division requires a Contests Publicity Officer. This position involves producing short items for inclusion on Divisional broadcasts, in club postings and the Mini Bulletin publicising various contests such as the Ross Hull, John Moyle NFD and the Remembrance Day. When the results of these contests are available, you will advise Council of the top scorers from VK2 in the various sections so that awards can be made to these amateurs/clubs.

We also require a JOTA Officer. This person would be required to co-ordinate liaison between amateurs and Scout and Guide Headquarters for the Jamboree on the Air (JOTA). JOTA will be held over the weekend of the 16th and 17th of October.

If you can assist in filling either position, please contact the office.

REMEMBRANCE DAY CONTEST

This contest will be held in August and the rules were published in AR. This Division will present Certificates of Merit to the first, second and third placegetters for stations operating in NSW for each section of the Remembrance Day Contest.

DETAILS OF CLUBS AFFILIATED WITH THE NSW DIVISION

CENTRAL COAST ARC
PO Box 238, Gosford, NSW 2250.

Net: Tuesdays at 10.00 UTC on 3.565 MHz, using VK2AFY.

Meetings: 1st and 3rd Friday of each month at 7.30 p.m. at the club rooms in Dandaloo Street, Kariong.

President: Terry Davies VK2KDK. Vice-President: John Pogson VK2DBC. Secretary: Mrs. Suzanne Wells. Others: Ray Wells VK2BVO, Stan Dogger VK2KSD, Len McNab VK2DDM, Leigh Aanensen VK2KAL.

Classes: NAOCP each Wednesday at 7.30 p.m. at club rooms.

Magazine: Smoke Signals, monthly. Editor: Leigh Aanensen VK2KAL.

Repeater: VK2RAG, channel 6750, and VK2RUG, channel 8075.

Field Day: February 20, 1983, at Gosford Showground.

GRIFFITH RC
PO Box 4, Griffith, NSW 2680.

Net: Wednesdays at 11.00 UTC on 28.480 MHz, using VK2DBK.

Meetings: 3rd Monday of each month at SES Headquarters.

President: Graham VK2DGW. Vice-Presi-

dent: Ted VK2AXD. Secretary: John VK2DFC. Social: Joyce VK2DIX, Bill VK2BBL, Roger VK2AYX. Repeater: John VK2YEZ, John VK2DFC, John VK2ZJL. Repeater: VK2RGF, channel 6850.

NORTH WEST ARG

PO Box 120, Inverell, NSW 2360.

Net: Mondays at 11.00 UTC on 3.575 MHz.

Meetings: As and when necessary.

President: P. Beard VK2VBM/XPB. Secretary: D. Bailey VK2NVN. Others: R. Cambridge VK2BYV, R. Moore VK2DSM, R. Stockman VK2ATS, T. Lumbewe VK2ZX, A. Mack VK2DPS, A. Yates VK2ZP.

Repeaters: VK2RMI, channel 6950, and VK2RAB, channel 6850.

COMING EVENTS

WICEN City to Surf, August 8.

Tamworth Field Day, September 4/5. (PO Box W107, West Tamworth, NSW 2340.)

SWARS Convention at Wagga, October 2/3. (PO Box 71, Kooringal, NSW 2650.)

NSW members and clubs are invited to submit news for inclusion in this column to PO Box 123, St. Leonards, NSW 2065. News for September AR should reach us by July 23.

73. Athol. ■

In France when they turn on their X-mtr it goes "clique".

(ARNS Bulletin) ■

The best way to hold a conversation is to let go of it once in a while.

(ARNS Bulletin) ■

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ATN 27-30-3B 10/11 Mx	10.0	3.5M	$90
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ATN 50-52.5-5	11.9	3.5M	$95
ATN 50-53-8	14.2	5.5M	$149
ATN 50-53-11	16.2	9.0M	$189
2 Mx			
ATN 144-148-8	12.7	2.2M	$59
ATN 144-148-11	14.6	3.8M	$69
ATN 144-148-16	17.0	6.3M	$89
ATN 144-148-13WS	17.3	7.0M	$89
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ATN 420-470-14	14.2	1.5M	$65
ATN 420-440-11	15.7	1.85M	$69
ATN 420-440-15	16.7	2.85M	$79
ATN 420-450-27	16.7	3.05M	$99
ATN 432-16LB	17.2	3.7M	$85
UHF CB (N Conns)			
ATN 47-5	9.2	0.65M	$45
ATN 47-7	10.2	0.7M	$49
ATN 47-11	17.0	1.7M	$65
ATN 47-15	17.8	2.8M	$75
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20-30-6S	6	4	7.5	$199
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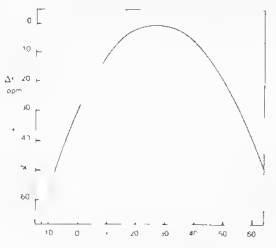

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1	Nominal Frequency	32 768 KHz
2	Frequency Tolerance	+30 ppm/28° +1°C
3	Drive Level	1uW max
4	Series Resistance	31 0 kOhms max
5	Q Factor	40,000 min
6	Parabolic Curvature Constant	Less than —0 04 ppm/°C (Refer Fig 1)
7	Turnover Temperature	28 0°C +5°C
8	Capacitance Ratio	700 max
9	Storage Temperature Range	—30°C +80°C
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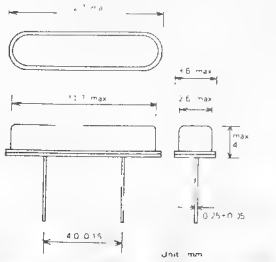

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VK/ZL/Oceania DX Contest 1982

Neil Penfold VK6NE

388 HUNTRISS ROAD. WOODLANDS WA

NZART and WIA, the national amateur radio associations in New Zealand and Australia, invite world-wide participation in this year's VK/ZL/OCEANIA DX Contest.

WHEN?

Phone

24 hours from 1000 GMT Saturday, 2nd October, to 1000 GMT Sunday, 3rd October.

CW

24 hours from 1000 GMT Saturday, 9th October, to 1000 GMT Sunday, 10th October.

RULES

There shall be three main sections in the contest:—

(a) Transmitting — Phone, open.
(b) Transmitting — CW, open.
(c) Receiving—Phone and CW combined.

2. The contest is open to all licensed transmitting stations in any part of the world. No prior entry need be made. Mobile marine and other non-land based stations are permitted to enter. Their "country status" will be determined by the country which issued the call sign used in the contest.

3. All amateur bands may be used but no cross band operation is permitted. NOTE: VK and ZL stations, irrespective of their location, DO NOT contact each other for contest purposes EXCEPT on 80 and 160 metres on which bands contacts between VK and ZL stations are encouraged.

4. Phone will be used during the first weekend and CW during the second weekend. Stations entering both sections must submit separate logs.

5. Only one contact on CW and one contact on Phone per band is permitted with any other station for scoring purposes.

6. Only one licensed amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor and must submit a separate log under his own call sign. This is not applicable to overseas competitors operating club stations.

7. Entrants must operate within the terms of their licences.

8. **CYPHERS:** Before points can be claimed for a contact, serial numbers must be exchanged and ACKNOWLEDGED. The serial number of five or six figures will be made up of the RS (Phone) or RST (CW) report plus three figures which may begin with any number between 001 and 100 for the first contact and which will increase in value by one for each successive contact. E.g., if the number chosen for the first contact is 021, then the second must be 022, followed by 023, 024, etc., etc. After reaching 999, restart from 001.

9. **SCORING**

(a) **For Oceania Stations other than VK/ZL:** 2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with the rest of the world.

(b) **For the rest of the World other than VK/ZL:** 2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with Oceania stations other than VK/ZL.

(c) **For VK/ZL Stations:** Points for each QSO on different bands as follows: 20m, 1 point; 15m, 2 points; 10m, 3 points; 40m, 5 points; 80m, 10 points; 160m, 20 points. Score for EACH BAND will be the total points score for that band multiplied by the total prefixes worked on that band. Final "all band" score is the SUM of the different band scores.

NOTE: W1, K1, WA1, WN1, A1, N1 (although in the same call area) are different prefixes and count as multipliers. W6AA/1 is same as above and counts as a "W1" and not "W6".

(d) **80 Metre Section:** For 80 metre contacts between VK and ZL stations, each VK and ZL call area will be considered a "scoring area" with each contact counting 10 points. Each different call area will count as a multiplier.

(e) **160 Metre Section:** Contacts permissible between VK/ZL, VK/VK, ZL/ZL, as well as VK/ZL to the rest of the world. Each VK and ZL call area will count as a "scoring area" with each contact counting 20 points. Each different call area will count as a multiplier.

NOTE: A contestant may claim points for contacts with other stations in the SAME call area for this 160 metre section.

10. **LOGS**

(a) **Overseas Stations:** (A) Logs to show in this order — date, time in GMT, call sign of station contacted, band, serial number sent, serial number received. UNDERLINE each new VK/ZL call area contacted. Separate log must be submitted for each band used.

(B) Summary sheet to show — call sign, name and address in BLOCK LETTERS, details of equipment used, and for EACH BAND — QSO points for that band — VK/ZL call areas worked on that band. "SINGLE BAND" score will be QSO points for that band multiplied by total VK/ZL call areas worked on that band. "ALL BAND" score will be total QSO points for all bands multiplied by total VK/ZL call areas worked on all band.

(b) **VK/ZL Stations:** (A) Logs must show in this order — date, time in GMT, call sign of station worked, band, serial number sent, serial number received. USE SEPARATE LOG FOR EACH BAND.

(B) Summary sheet to show — name and address in block letters, call sign, for EACH BAND — QSO points for that band, prefixes worked on that band, claimed score for that band. "All band" score will be total of single band scores. Give details of equipment used and declaration that all rules and regulations hace been observed.

11. The right is reserved to disqualify any entrant who, during the contest, has not strictly observed regulations or who has consistently departed from the accepted code of operating ethics.

12. The ruling of the Executive Council NZART will be final.

13. **AWARDS: Separate awards for** Phone and CW.

World-wide except VK/ZL

(a) Attractive multi-colour certificates to the top scorers in each country (call areas in "W", "J", "U").

(b) Depending on reasonable degree of activity, separate awards may be made for top scores on different bands.

(c) Where many logs are received, consideration will be given to awarding second and third place certificates.

To VK and ZL Stations: Open Section — Certificates:—

(a) To top three scorers in each call area VK/ZL.

(b) To top three scorers on individual bands (160, 80, 40, 20, 15, 10) in VK and in ZL.

14. **ENTRIES FROM VK/ZL STATIONS** should be posted direct to:—

NZART Contest Manager ZL2GX,
152 Lytton Road,
Gisborne, New Zealand,

to arrive before 31st DECEMBER, 1932.

ENTRIES FROM OVERSEAS STATIONS: Posted to the above address to arrive not later than 31st JANUARY, 1983.

SWL SECTION

1. The rules are similar to the transmitting section, but it is open to all members of any SWL Society in the world. No transmitting station is permitted to enter this section.

2. The contest times and logging of stations on each band per weekend are as for the transmitting section except that the same station may be logged twice on any band — ONCE ON PHONE AND ONCE ON CW.

3. To count for points, the station heard must be in QSO exchanging cyphers in the VK/ZL/Oceania DX contest and the following details noted — date, time in GMT, call of the station heard, call of the station he is working, RS(T) of the station heard, serial number SENT by the station heard, band, points claimed.

4. Scoring is on the same basis as for the transmitting section and a summary sheet should be similarly set out.

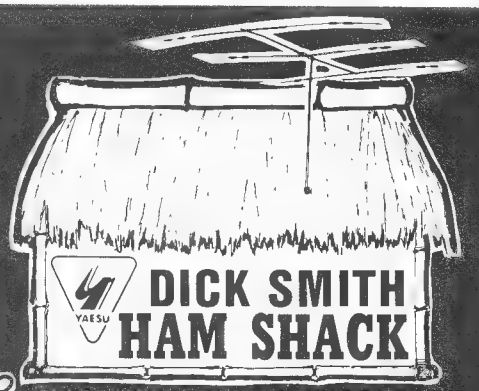
5. Overseas stations may log ONLY VK/ZL stations, but VK receiving stations may log overseas stations and ZL stations, while ZL receiving stations may log overseas stations and VK stations.

6. Certificates will be awarded as listed in the section under awards.

Please note: These are NZ Rules which differ from WIA Rules. ■

DON'T MISS OUT!

Check out the Yaesu bargains in my new Ham Shacks



Dick Smith Ham Shacks are located in the Dick Smith stores listed below. You'll find a licensed amateur at each shack — someone who can talk your language and give you any help you need. (Amateur items also available at other Dick Smith stores.)

FT-ONE — The ultimate

Top of the line it's got everything SSB AM - RTTY CW - FM* 100W PEP - Built in power supply Cat D 2852

ONLY $1975

(*Option) General Coverage 150kHz - 30MHz

FT 720 RVH 2m

FM 25 watt it goes remote scanning & memories Cat D-2890

$369.95

SPECIAL - AUGUST ONLY
Remote cable only $10
Hurry while stocks last!

TH 3JR HF Antenna

Triband (10-15-20 mtrs) beam, 12' boom, 600W PEP. Approx. 8db gain, 25db F/B. Cat D-4304.

ONLY $275

150 FB VHF-UHF SCANNER

Hear it all! Touch control fully synthesised. Cat D-2800

ONLY $275

WHY PAY MORE?

FT 480R

Big gun all mode It's got it all in such a small package 1 & 10 watt output plus scanning plus memory plus NB plus tone burst plus priority ch plus 2 VFO's plus satellite operation Cat D-2887

only $514

SAVE $$$!

FT 208R 2m

FM - hand held, 800 chan loaded with features: LCD, 10 memories, scanning, hi/lo power, touch tone, memory backup, and comes complete with charger and battery. Cat D-2889.

~~WAS $368~~ **only $325**

NEW

FT 102

Big power — 3 x 6146B — built in power supply all WARC bands super dynamic range — best ever! Cat D-2880.

and it's only $1195

V5JR HF Antenna

5 band (80-40-20-15-10 mtrs) vertical. 1 kw PEP, 6.7m high, very good for limited space applications. Cat D-4305.

ONLY $99

5/8 WAVE 2 mtr Whip

Fits our standard 3/8 base (D-4056). 1.3m long — fibreglass construction. Cat D-4205

ONLY $14.95

FT 101Z (FM)

Old reliable — the famous 101 with FM and all the WARC bands too Cat D-2872

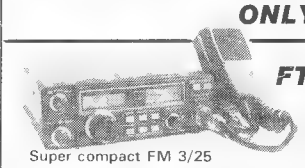
ONLY $885

SAVE $30!

FT 707 HF MOBILE

Car/boat, plane or even home This is the hot little giant, all solid state 100W PEP, all WARC bands too! Cat D-2869

only $765 ~~WAS $798~~



FT 230R 2m ONLY $359

Super compact FM 3/25 watt synthesised — LCD — 2 VFO's — 10 memory plus scanning. It's out of sight 2m radio!! Cat D-2893

FT 107m/dms

SAVE OVER $100!

Solid state built in power supply — all WARC bands and digital memory Cat D-2871

~~WAS $1328~~

ONLY $1225

NEW

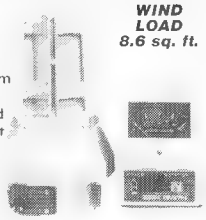
VHF — UHF Whip with base

68-600 MHz comes with cutting chart. 110cm long stainless steel super for UHF CB & 2m amateur & 70 cm amateur & our new scanners Cat D-4023

ONLY $9.95

ANTENNA ROTATOR

WIND LOAD 8.6 sq. ft.

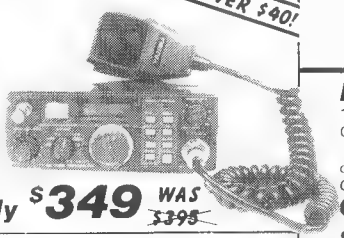


with control box. Rotation torque. 500kgcm Braking torque; 1500 kgcm For VHF/UHF and small HF beams - perfect for TH 3JR (above) Cat D-5000

$139

FT 290 R 2m

SAVE OVER $40!



All mode scanning portable plus LCD plus 2 VFO's plus 10 memories plus hi/lo power plus built in antenna plus NB plus memory backup Cat D 2885

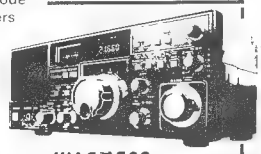
and it's only $349 ~~WAS $395~~

FRG 7700 HF RECEIVER

150KHz 30MHz Go anywhere all mode short wave listeners dream come true Cat D-2840

ONLY $525

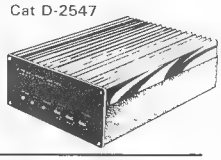
SAVE OVER $10!



~~WAS $539~~

FL 2050 2m linear

Cat D-2547



70 watts output for 10 watts input Great for mobile 13.8V operation. Perfect with our FT 480R and hand helds.

only $239

FL 2100Z HF Linear

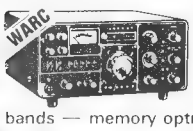
Big power 1 2kW All WARC bands. Cat D-2548

SAVE $12!

~~WAS $580~~ **$568**

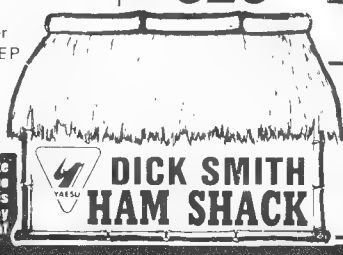
THAT'S LESS THAN 48¢ PER WATT!

FT 902D



Built - in power supply, 180W PEP in all WARC bands — memory option Cat D-2853

ONLY $1195



The stores at right stock this complete list of Dick Smith Amateur Radio equipment. All other Dick Smith stores stock some amateur equipment but may not be able to give you the service at "Ham Shack" stores listed.

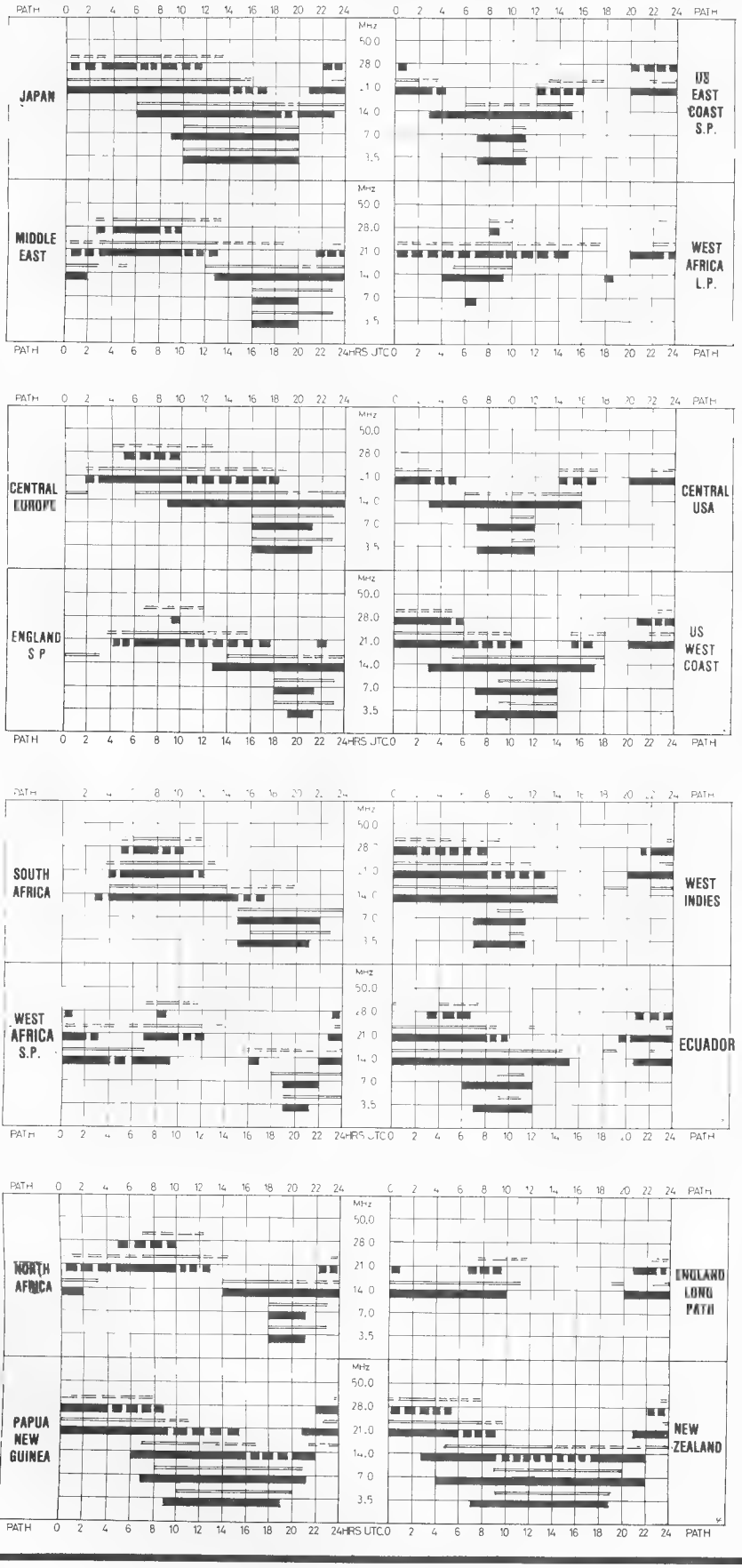
Sydney — 125 York St 290 3377
Gore Hill — 162 Pacific Hwy 439 5311
North Ryde — 396 Lane Cove Rd 888 3200
Parramatta — 30 Grose St 683 1133
Adelaide 60 Wright St 212 1962
Springvale — Dandenong Rd 547 0522
Richmond — 656 Bridge Rd 428 1614
Perth — 414 William St 328 6944
Buranda — 166 Logan Rd 391 6233
Chermside — 842 Gympie Rd 59 6255
Melbourne — 399 Lonsdale St 67 9834

DSE A307 PA

W0817

IONOSPHERIC PREDICTIONS

Len Poynter
VK3BYE



Amateur Radio Cruise on the Oriana

Pete Taylor VK2DAB
280 Banna Ave., Griffith, 2680

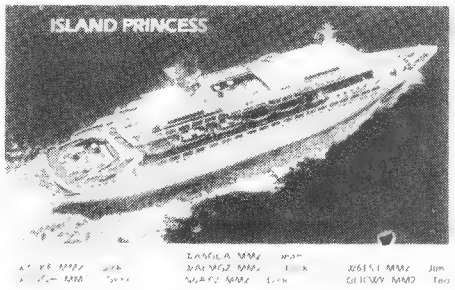
The operators who made the first amateur radio cruise ever last year on the "Love Boat", Island Princess, in the Caribbean, are doing a repeat this October on the P&O's Oriana out of Sydney. This time they hope to welcome some of their "down under" compatriots as operators.

With both HF and VHF stations aboard, the Oriana will sail out of Sydney on October 16 for Auckland, making two stops in Fiji before proceeding on to the New Hebrides and New Caledonia and returning.

The group will be led by Dr. Gene Clark W6DQH and his wife, Dr. Jean Clark WA6GUA. Jim Walden W6ESJ, Charles "Chuck" Smallhouse, and Dick Barrett W6CFK, and their wives, all of whom were on the pioneer cruise, have signed on for this one.

The amateur cruises were the inspiration of Nancy Smallhouse, a Los Altos, California, travel agent working from 161 S. San Antonio Road, Los Altos, Ca. 94022), who purchased a TS820S and a vertical trap antenna for three bands. Chuck cut the antenna to fit into a four-foot wooden carrying case of his own construction. Guyed with nylon, it survived 45 knot winds on the Gulf of Tehuantepec last year.

The US amateurs expect to arrive in Sydney a few days early to see the city and recover from jet lag after 18 hours of air travel from the west coast. ■



THE "OOPS WHO GOOFED" DEPARTMENT

VK-ZL RESULTS 1981
Amateur Radio, May 1982, page 39.
24 HOUR SECTION — CW
After VK4XA insert VK2AYD 55104/ 13312/24592/117115/60/0. 809,145, 214,515.

Amateur Radio, June 1982, page 45.
CW SECTION
After YU7NQG insert HB0NL M 24 12 48 576.

VK6NE.

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

PO Box 520, Geelong 3220

The Editor,
Dear Sir,

I have been directed by the membership of the Geelong Amateur Radio Club to write to you expressing their concern regarding the creditibility and sincerity of WIA sponsored contests.

The reason for their concern is the apparent lack of care and attention to detail illustrated in the train of events surrounding this Club's effort in the 1982 John Moyle Memorial Field Day. These events, coupled with the feeling of "too bad chaps", has left the membership completely disenchanted with WIA contests.

To have put in the effort required to participate and to have rigorously checked all facets of the submitted log, members expect some effort on the part of the WIA to carefully check rules and validate results.

We enjoyed the contest and put in our best effort to date, then to be ruled "out" by faults, not of our own making, is unfair.

Please do not misunderstand our intention in writing this letter. We accept the umpire's decision, but feel the concerns expressed should be published in our national magazine.

I have set out the events in as concise a fashion as possible to illustrate the basis of our concern and you will find included copies of the relevant documents.

December 1981: Rules of the John Moyle Memorial Field Day published in AR (page 35). Rule 22 states, "Logs to be post-marked no later than 28th February, 1981, and sent to FCM, Box 1065, Orange 2800". It was later to be confirmed that not only was the posting DATE incorrect, but also the ADDRESS.

February 1982: Notification in AR of incorrect address (page 46) under heading "We Goofed". "You probably noticed last month . . ." In fact, TWO months had elapsed since the rules were published.

6th-7th February, 1982: John Moyle Memorial Field Day.

26th Febraury, 1982: Contest log from GARC sent to Orange address as stated in rule 22. Post-marked this date.

5th April, 1982: Letter addressed this date received from Federal Contest Manager indicating receipt of GARC log on the 2nd April, forwarded from Orange (35 days after posting), and too late for inclusion in the results to be published in May AR. With this letter the Club received a "Certificate of Commendation in the Open Portable Section E", and indicated a score of 16,268 POINTS.

15th April, 1982: This Club forwarded a letter to the FCM expressing our concern and dissatisfaction with the Special Commendation, in view of the fact that the Club obeyed all rules as published in AR.

May 1982: Results of John Moyle Field Day published in AR (page 38). Winner of the Open Portable Section E, VK3APC with 10,667 points.

8th May, 1982: Letter received from the FCM accepting the GARC log "Because of its exceptional quality and because of the date of posting", "You will be listed in AR as equal first with the current winner but without your score".

This letter was accompanied by a certificate to certify VK3ATL gained first place Open Portable 1982, scoring —— points.

June 1982: Under Contests AR (page 39) indicated the late arrival of the GARC log. It neglected to mention it was kept in Orange for a month. The notification then suggested it was "Impossible to award this club a place".

The major concern of this Club about the whole sorry affair is the future credibility of WIA sponsored contests. We support the John Moyle Field Day contest because it has a club orientated section, because we enjoy it and because we want to win.

In closing we wish to commend the Federal Contest Manager's effort to finalise results quickly, but please in future make sure all the groundwork is accurate and that some effort is made to check logs.

73. Barry Abley VK3YXK.
Hon. Secretary Geelong Amateur Radio Club. ■

39 Columba Street, Inala 4077

The Editor,
Dear Sir,

With regards for more privileges for the Novice. This class was introduced to get "budding" AOCPs on air. A frequent comment that I hear is "I have my Novice licence, why go higher?" To give Novices any more privileges will entrench these people in their ways.

I call on the Federal Council to oppose any more priveleges, also a call for a five year tenure on Novice licensing, with re-examination at the end of tenure if they wish to hold their licence.

I received 68 per cent in August 1980 exam, but due to personal reasons and ill-health I was unable to sit for the examination last year.

Yours sincerly,
T. P. Kelly VK4NRE. ■

142 Sutherland Road, Beecroft, NSW 2119

The Editor,
Dear Sir,

Further to my letter of March 27th, 1982, stating that it cost $105 (in labour) to repair a "latest type"' solid state transceiver, which only involved replacing a transistor and a capacitor costing $2.04. Two and a half hours of labour at $42. per hour.

Two thoughts occur to me. ONE, when it gets around that these super sets cost a fortune to keep on the air, people will cease buying them. My set has been back to the Agents at least five times. Four while under warranty. This will boomerang on to the makers and the Australian Agents. The sets will cease to sell. What happens then?

The SECOND thought is this: Don't ask the technicians to work for less wages, but the COMBINED Agents take out an insurance policy covering repairs so that the repair bill to the owners of failed sets is subsidised by the insurance policy. At least in part.

There is nothing insurmountable in this idea. Some sets (of the brand I bought) never have had a single fault. My set is a lemon, it terrifies me to even turn it on. The sets that have no faults will pay for the lemons, and of course will also subsidise even the few faults of the "good" sets.

If the Agents do not do something to ease the intolerable burden of high cost repairs we amateurs could arrange to advertise the brands of these lemony sets, also invite owners to join in on a joint insurance policy. It could all be legally and morally done in such a way that nobody would be taken for a ride in any way whatsoever.

The WIA might be delighted to be the sponsor of such an idea. In fact, the idea of an insurance policy going far beyond mere repairs might blossom from this basic start. It might cover, in the long-run, theft, fire, damage in transit, and so on.

I trust that the above insurance idea will not be lightly put aside. I'm going to send copies of this letter to all the Agents (and overseas makers) and see if I can spark off some action. It would be in the interest of sales by the Agents as well as in the interests of the owners of lemons.

Yours faithfully,
Norman Blake VK2NDG. ■

PO Box 115, Heathcote 3606

The Editor,
Dear Sir,

Once again August arrives and with it the RD Contest.

After more than 20 years of contesting I feel qualified to make a few pertinent comments on recent trends.

My first point is that you may operate anywhere within the bands covered by your licence, but you do NOT OWN any particular frequency. My pet hate is hearing the childish petulent cry:—

"Aw this is my frequency old man (sob sob!)."

I, and many other experienced operators, have made a legitimate contest exchange before the LID has finished his sentence.

Secondly, increasing the mic gain on a commercial rig to maximum does not get you more contacts; it causes splatter, wastes power and creates interference.

Thirdly, a contest is a test of speed and accuracy — I want a number and acknowledgement of the number I send — faster the better — tell me your name, QTH and how many eggs your grandmother has for breakfast a week later.

Finally, the decision to drop the open section was idiotic and a good example of the lowering of amateur standards. The fact that the many letters to AR and contest managers have been ignored is amazing. Correction is easy — simply bring the contest back to three transmitting sections as originally planned in 1946.

In spite of the above moans I will be in it again this year, so best of luck in the contest.

73. Mike O'Burtill VK3WW. ■

67 Koornalla Cres., Mount Eliza, Victoria 3930

The Editor,
Dear Sir,

What is the meaning of the insidious emergence of this symbol?

I have seen this appear too frequently in recent copies of AR. Has it been agreed by all members of the WIA to use it in preference, or instead of, the badge or logo of the organisation I joined?

Almost all other radio societies in the IARU (and the world) to my knowledge use a similar diamond shape logo. BUT the WIA, I have been led to believe, has roots earlier than the rest. SO — why not promote the distinctive badge? I could not agree with VK7AM (AR June 1982, page 54) more, although I have only been a member since 1965.

As AMATEUR RADIO OPERATORS we must be progressive — but change for change's sake or to merely weakly mimic the rest of the crowd is surely a hollow way to attempt to be "with it". There is nothing wrong with the WIA badge (the proper one). If we promote it more and keep it polished, in the metaphorial sense, surely we can make it last to become one of the great logos of the AR world. It has a great history of innovation — we should keep it that way.

Further, the presentation of that diamond shape has always been amateurish in the worst sense of the word. It looks in the reproductions for all the world like a first year secondary school student's attempt at drafting!

Please keep the PROPER WIA badge (LOGO) — GET RID OF THAT DIAMOND SHAPE. Yes, it does look like an expletive, does it not! I was proud of the WIA badge when overseas for over seven plus years, let's retain it for the future.

Yours faithfully,
Chris Walker VK3DDX (formerly A22DW, VK7UX).

(The WIA international diamond badge or emblem is an optional usage badge in no way superseding the WIA distinctive badge or logo. Please see page 2 of the WIA Book, Vol. 1, and AR July 1980, page 35.—Ed.) ■

NEW

CHIRNSIDE VERTICAL ANTENNA

Model

CE-5SS

5 band self supporting

Unlike our Model CE-5B, this vertical needs no guy ropes and stands only 5 metres high, is very easy to erect and can be disassembled again into four pieces in about 45 seconds.

YES, ONLY $79

Just the antenna to have in the boot of your car or caravan for quick portable operation and for JUST $89 you can afford to have one for that occasion.

Specifications

Frequencies ... 80M to 10M.
Impedance ... 50 ohms at resonance.
Power handling ... up to 1 KW PEP on 20-15-10M, up to 400 watts PEP on 80M and 40M.
¼ wave length type operation.
Termination ... SO-239 socket.
Weight ... approx. 3 kg.

GET ONE DIRECT FROM OUR MAIL ORDER DEPT.

$79 plus freight charges.
Bankcard welcome.

CHIRNSIDE ELECTRONICS PTY. LTD.

26 Edwards Rd, CHIRNSIDE PARK, LILYDALE, 3116

Phone (03) 726 7353

WO818

OBITUARIES

MURIEL EAGLES VK2AIA

Muriel Eagles ex VK2AIA, of Strathfield, NSW, died on June 9th, 1982.

Muriel was 91 years of age. She was privately interred at Randwick cemetery.

Muriel was the devoted wife of the late Jim Eagles VK2AIA.

I first met Jim Eagles VK2AIA in 1949. On rare occasions one meets with active friendship and empathy. So it was with Jim. He had time for his friends.

After half a dozen years of this camaraderie Jim died, leaving a very distraught Muriel.

Muriel had learnt the code during WW2 and did in fact copy some useful things at that period.

After enormous encouragement, Muriel, who had never studied technical radio subjects, began to study for her amateur ticket.

Many question and answer sessions took place.

The first time she attended the exam she developed nerves and came straight home.

Once she passed though, there was no holding her! I took a modified No. II set to her home one Saturday morning, got everything going, and left her in contact with a pleasant fellow at Church Point; her first contact.

But after that!

Once she went on to SSB she became almost completely involved with on the air amateur radio.

Amateurs all over the world heard the distinctive voice which pierced all QRM far more effectively than those of ordinary male amateurs.

She went to field days, took part in fox hunts, appeared on television, gained literally scores of awards. I've seen her being tossed around in my car on a bush track hanging on to young Florence, my daughter. I remember perceiving a somewhat stern look on such occasions.

Well, she was in her late seventies at the time.

For those old friends who wonder . . . I have all her awards, even a photograph of her at five months.

Also Jim's first wireless telegraphy licence dated 1st July, 1914.

For the past several years Muriel had been resident in a nursing home and out of contact with most of her friends.

I do not feel really sad at the passing of a good old friend at the age of 91.

I remember the ambience of a thousand conversations, the memories of her girlhood, her reminiscences of Jim, old Char the cat, Teachers' College . . . so many things.

I am so glad to have known Muriel. Deepest sympathy is extended to Muriel's younger sister, Emilie.

73, 88, Muriel, from your hundreds of friends world-wide.

Harold Burtoft VK2AAH ■

It is with very deep regret that news was received of the passing of Brigadier-General Kamchai Chotikul HS1WR, President of the Radio Amateur Society of Thailand. "Kam" was responsible for the development of amateur radio in Thailand in recent years and was also a staunch supporter of the IARU R3 Association. Sympathies are extended to his widow, a keen supporter of amateur radio, and also to his family.

VK3ADW. ■

SILENT KEYS

It is with deep regret that we record the passing of —

Mrs. M. EAGLES	Ex VK2AIA
Mr. R. A. EGAN	VK2ARE
Mr. CHARLES HIAM	Ex XLD, Ex 3LW, Ex VK3LW
Mr. R. V. JACKSON	VK2NXK
Mr. A. E. MOORE	VK4VCM

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HAMADS

PLEASE NOTE: If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members. $9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142.
- Repeats may be charged at full rates.
- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA current Call Book.

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is $15 for 4 lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken St., Oakley, 2223).

CB Radios $69; walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer $120; base mic., $45; ultrasonic alarm, $35; all ham bands on a single 6 ft. whip, 1.8 to 30 MHz, for base or mobile, $300; aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066.

QSL Cards from $7 per 100 to $66 per 1,000. Send 35c stamp to Bint Services, PO Box 323, Cheltenham, 3192, for details/samples.

EXCHANGE

BRNO Model ZH302 U/O Shotgun, 2 sets of barrels for short and long range shooting (skeet, trap, rabbit, duck), as new, current price $730, for good quality oscilloscope. If interested phone Gosford (043) 24 7630. VK2DJH.

WANTED — NSW

Antenna Rotator: Medium duty antenna rotator with controller, in good cond. VK2KNW. Ph (02) 570 2063.

Crystals: 144 MHz , tx and rx, for channel 7 rpt., for use in a Ken KP202 txcvr. Reply VK2ABC. Ph. (02) 451 1313.

Yaesu FTV250 2m Transverter, to suit FT101E. Details to John Callcott VK2DXA, Box 750, Tamworth 2340.

WANTED — VIC.

Breadboard and Plug-in Components for Phillips practical electronics study course. I have books 1 to 6. The course is prepared by Phillips Educational Products and Systems. John Barbuto VK3VAI. Ph. (059) 89 6099.

Kenwood TS-130S or Icom IC-701/PS-701. Please contact VK3OM, QTHR. Ph. (03) 560 9215.

Manual and Circuit Diagram for AWA SSB sig. gen., type 1A95104 (serial No. 10). Can photocopy and return. Ken VK3KGX. Ph. (03) 658 3869 Bus., (03) 528 4229 AH.

Medals: Ex-serviceman and private collector wants military memorabilia and medals for collection, anything will be gladly accepted. Ph. (03) 221 5819 Wantirna South, Victoria.

Receiver AR8 and accessories, also No. 19 or any WWII radio equip. Tim Vibert. Ph. (058) 21 9999 Bus., (058) 26 2427 AH.

Valves: A quantity 3TF7 (one or more) valves for 391 receiver. VK3ZNZ, PO Box 32, Ocean Grove, Vic. 3226.

WANTED — QLD.

HP 410B VTVM for parts, transformer and case must be in good cond. Wayne Kerr type B221 Bridge. VK4JZ, QTHR. Ph. (07) 44 7980.

WANTED — SA

Clegg AB-144, short-wave to 2m, converter, or circuit diagram, will arrange or pay for photocopying, as preferred. VK5NRL/ZRL, QTHR. Ph. (08) 271 0900.

FOR SALE — ACT

Antenna: Nagara V4Jr 4-band trap vert. antenna, $55; Icom IC3PA AC PSU, in fitted carrying case with compartment to add your IC22 series txcvr. for a complete suitcase station, $45. VK1CDR, QTHR. Ph. (062) 95 2352.

FOR SALE — NSW

Antenna: CE-42, 15-10m, duo band, by Chirnside Electronics. This unit, in p. cond., only 6 months use, has been repacked in orig. carton with full instructions. Urgent sale required as unsuitable to landlord in new QTH. A bargain at $120. VK2KMH. Ph. (075) 36 4915 AH.

Antenna: Tri-band beam Hygain TH3 3 el., g.c., orig. packing, $150. VK2EL. Ph. (02) 523 1293.

Award Chasers: Alphabetical list of Japanese cities and prefectures with JCC number; also New Zealand towns with counties, $2 ea. PP. Bill VK2EBM/PFH, QTHR VK2PFH.

Deceased Estate Late VK2AML. 40 ft. wind-up tower, TH3JR triband beam, CDR rotator and indicator, Kyoritsu SWR meter, FTDX400 txcvr., operating desk 74 in. x 34 in., various cupboards AM tx. with various meters tx. has low output beam tx., etc., in position for checking. Priced to clear $550, ONO. 139 Bruce Street, Brighton, NSW 2216. Ph. (02) 59 6636.

Dentron Clipperton-L Linear Amp., 160 to 10m, 4 x 572B tubes which coast along at the Aussie legal limit, brand new cond., not a scratch on the cabinet, has been used very little and with tender loving care. Bargain at this price, $660, including freight. Hew VK2VW. Ph. (043) 88 3303 or (043) 32 9011.

Hidaka VS-33 Beam, 20-15-10, c/w instructions, as new, $230; Icom IC22A 2m txcvr., FM, 1 or 10W, c/w inst. manual, mounting bracket, R2 to 8, S40 and 50, v.g.c., $150; National R-R tape recorder, RQ706S, c/w schematic diagram and tapes, v.g.c., $40; WARN free wheeling hubs, c/w inst., $80. VK2KTO. Ph. (063) 42 2873.

Icom 701 HF Txcvr., with power supply and desk mic., bought from Vicom, excel. cond., $850; Yaesu FRG7 .5/30 MHz rcvr., excel. cond., $190. Mike VK2BMR, QTHR. Ph. (02) 639 8643.

Kenwood TS520S with op. manual and spare finals, $420, ONO. VK2KLB. Ph. (049) 52 3053 after 4 p.m.

Kenwood TS520S, unmarked, spare tubes, orig. carton, $495. VK2DHE, QTHR. Ph. (02) 82 1702.

Kenwood TS900 Txcvr., power supply and access., needs minor repairs, bargain $460, ONO. VK2ANX, QTHR. Ph. (02) 638 4191.

Yaesu FT200, no mods., incl. power supply, manual, some spares, $300. Richard VK2AU, QTHR. Ph. (02) 523 1547.

Yaesu FT207R, 2m, hand-held, with manuals, charger and speaker-mike, ex. cond., no mods., $200. VK2KNW. Ph. (02) 570 2063.

FOR SALE — VIC

Alpha 77SX, the ultimate linear amp., 1.6-30 MHz continuous coverage, pair 8877 tubes, in. g.g., power rate 100 per cent duty cycle, new cond., with book and carton, genuine enquiries. VK3BTI, Ph. (03) 489 0817.

Antenna Quad Hygain, mod. 244, 10-15-20m, comp., in carton. VK3BTI. Ph. (03) 489 0817 AH.

AWA Carphone MR10c, comp. with PS, speaker, etc., mod. for 52 MHz, less xtals, inc. spare 2E26 and some other valves for tx/rx and manual, $15; AWA remote control unit, type RC 1a, comp. AC PS, speaker, etc., inc. spare valves and circuit, $10; Pye Victor low band, easy mod. to 52 MHz, spare late TV valves and PA QQE/3-10, circuit avail. if req., $12; valves — QQE6/40, QQE3/20, 815, QQE4/20, EM80 6AG7, sockets for QQE6/40. Best offers. Licensed amateurs only. VK3EM, QTHR. Ph. (03) 578 7745.

Comp. Station for Sale: FT101E, unmod., base and hand mics., Hidaka VS33 triband yagi, Emotator med. duty rotator with cable, 35 m, 35 ft. free-standing tower, 35m RG58/AU coax, Helray PEP meter (novice), assorted meters and switches, plus many shack items, sell the lot, will not separate, $1,000. Bob VK3AWN. Ph. (03) 616 4485 WH.

Computer: 4016 Commodore, ex. cond., comp. with tapes and games, cost $1,350, sell $850; Icom IC211, ex. order, swap for Icom 490 or IC551 in like order, or sell, $550. VK3GM, 15 Wendouree Parade, Ballarat 3350. Ph. (053) 32 7157.

Deceased Estate VK3OL: Yaesu txcvrs., FT101 and FTDX570, both with mics. and handbooks, Kenwood FT2200G VHF txcvr., Gemtronics GTX336 CB txcvr., with handbook, Tech TE22 audi gen., Sanwa SWG301 test osc., Sanwa P1B multi-tester, CRO disposal home-brew, SCR221J freq. meter with calib. book, Sony-O-Matic R to R tape deck, prices ex dispersal location, offers considered. Ph. (03) 836 0707 9 to 5 weekdays.

Ham Shack Clear-out: FT7 txcvr., $400; YC7B dig. readout, $100; 6 amp power supply, twin meters, $50; YD148 desk mic., $35: Yaesu ant. tuner, FC707, $110; total $695. Allen VK3NBC. Ph. (03) 798 4075 AH.

Heathkit SB200 Linear Amp., ex. cond. near new, 572 Bs. VK3ARZ, QTHR. Ph. (03) 584 9512.

IC502 6m Txcvr., ex. cond., has worked many DX stations, have new rig, no further use, $150. Robert. Ph. (03) 347 6264 Bus., (03) 347 2069 AH.

IC701, immac. and ex. order, station update sale, IC260, immac., only 12 mths. old, orig. packing, better buy than new IC25A, station uqgrade, would consider exchange for IC490, negotiable. VK3GM, QTHR. Ph. (053) 32 7157.

Kenwood TS520S, 160-10m trsvr., virtually unused and absolutely immac., includes MC50 mic., manual, see or hear working, $450, or genuine offer. Ron VK3VRB, QTHR. Ph. (03) 560 9018.

Kenwood R820 Rx., 160-10m, plus SW bands, AM, SSB, CW and RTTY, dig. readout, IF shift, P/B tuning, notch filter, transceive capability with TS820, with matching woodpecker blanker, as new, in carton, $550, ONO. VK3ARZ, QTHR. Ph. (03) 584 9512.

Kenwood TS700A all mode 2m txcvr., 144-148 MHz, all solid state, 12V DC and 240V AC, PSU built in, with NB, xtal calib., RIT, mic., hand book, 4 yrs. old, exc., cond., no mods., $320; Kenwood TS520S HF SSB/CW txcvr., 100W PEP out, 160-10m, mic., hand book, little used, no mods., 3yrs. old, as new cond., in orig carton, $525. Bruce VK3UV, QTHR. Ph. (03) 580 6424 AH.

KW Viceroy Mk. 2 SSB Tx., 80/10m, all valve with 6146 finals, incl. xtal mic., 240V power supply, connecting cables, circuit diagram and operating inst., $200. VK3AVV, QTHR. Ph. (03) 859 1752.

Motors: Stepping motors, American Slo-Syn., MO92-FCO8, 1.8 degrees step angle, 3V, 4A, (3) new in pack, $100 ea. Ph. (03) 61 3144.

Yaesu FT101E, AC/DC, c/w fan, cables, instr. manual, hand mic. and Leason TW232 desk mic., covers 160-10m with 30m and 11m fitted, has RF processor inbuilt, $450. Chris VK3DAX. Ph. (03) 560 5335.

Yaesu FT101E HF Txcvr., good cond., fitted with 11m, covers 160-10m, all accessories and service manual, $600, ONO; Yaesu FT208R 2m hand-held, 2 mths. old, in carton, all acces., incl. GFS 5/8 telescopic antenna, 12V DC car adtp. and hand mic., $420. Jack VK3DIU. Ph. (03) 338 2282.

Yaesu FT101EE, AC-DC, cool fan, attached G3LLL speech clipper and SWR meter, spare new finals and driver tubes, maint. book, all g.c., $525. VK3AMC, QTHR. Ph. (03) 592 9036.

28 MHz Yagi, 3 el. and coax, $40; prop-pitch motor, transformer, 56 ft. 5-core cable and Selsyn inds., $60; Command rx, 455B, 6-9 MHz, unmod., $20; FT101 hand book, AC lead, mic., $7; 2 x 6SJ6C, $20; 1 x 12BY7A, $2; freq. counter Micronter, 100 Hz, 45 MHz, $60; 100 kHz xtal, $5; Yaesu FT7 txcvr., $300; 4 x heliwhips, 7 to 10 MHz, $25. VK3PZ, QTHR. Ph. (03) 288 1047.

FOR SALE — QLD.

Teletype Paper, $1 per roll or $10 per box of a a dozen, post./cart. extra. Box of 12 weighs 10 kg. The Secretary, the South East Queensland Teletype Group, PO Box 184, Fortitude Valley, Qld., 4006.

FOR SALE — SA

Icom IC260A, 2m, all mode, superb unit, orig. cond., twin VFOs, memories, reverse facility, squelch on SSB, selectable AGC, etc., with IC-HM10 scan/search mic., all acces., carton, manual, $450. VK5AVR. Ph. (087) 62 2034.

Valves: Tx valves, new, 4-65A, QE3-300, 2 x 807, 2 x 866A, 1 x 4CX 250B, 1 x VCR and socket, used, but as new, 1 x 4 x 150A (7034), 4E27 (8001), 829B and socket, 815. New less 816 — 2 sets valves for KW2000, used but OK, 1 set valves for KW2000. Receiving valves, 150 octal sockets and glass, various pins, AM tx., 160m to 6m., 829B in final. VK5LC, QTHR.

Yaesu FT707 and mic., $670; Scalar 2m mobile stub with triband attach., with 80m, 15m and 10m resonators (10m resonator needs repair), $50; Yaesu desk mic., $30; equipment at QTHR in Adelaide. VK5NFI. Ph. (08) 276 8353.

FOR SALE — WA

Yaesu FT107M/DMS, with scanning mic., manuals, in box, very seldom used, still in unmarked brand new cond., $950, ONO. John VK6NJM, 31 Chaplin Street, Esperance 6450. Ph. (090) 71 2897 AH.

FOR SALE — TAS

Icom 701PS, 20A power supply, built-in speaker, matches Icom 701 txcvr., p.c., orig. pack., $125. VK7MG, QTHR. Ph. (002) 57 8220.

Yaesu FT101ZD, inc. FM board, new, $800; FV901DM scan VFO, new, $225; accept offer for both, boxes, etc. VK7AN. Ph. (003) 31 9455 Bus. (003) 31 7914 AH.

HAMADS MAKE IT HAPPEN

YAESU FT-102
HF ALL MODE TRANSCEIVER

IF Transmit Monitor
An extra product detector allows audio monitoring of the transmitter IF signal, which enables precise setting of the speech processor and transmit audio so that the operator knows exactly what signal is being put on the air in all modes. A new "peak hold" system is incorporated into the ALC metering circuit to further take the guess-work out of transmitter adjustment.

New VFO Design
Using a new IC module developed especially for Yaesu, the VFO exhibits exceptional stability under all operating conditions. The circuit design is extremely simple, using only axial-lead components.

Better Dynamic Range
The extra high-level receiver front end uses 24 VDC for both RF amplifier and mixer circuits, allowing an extremely wide dynamic range for solid copy of the weak signals. For ultra clear copy on strong signals or noisy bands the high voltage JFET RF amplifier can be simply bypassed via a front panel switch, boosting dynamic range beyond 100 dB. A PLL system using six narrow band VCOs provides exceptionally clean local signals on all bands for both transmit and receive.

Total IF Flexibility
An extremely versatile IF Shift/Width system, using a totally unique circuit design, gives an infinite choice of bandwidths between 2.7 kHz and 500 Hz, which can be tuned across the signal to the portion that provides the best copy sans QRM. A wide variety of crystal filters for fixed IF bandwidths are also available as options for both parallel and cascaded configurations. The 455 kHz third IF also allows an extremely effective IF notch tunable across the selected pass band to remove interfering carriers, while an independent audio peak filter can also be activated for CW reception.

New Noise Blanker
The new noise blanker design enables front panel control of the blanking rules width, substantially increasing the number of types of noise interference that can be blanked, and vastly improving the utility of the noise blanker for all types of operation, including woodpecker blanking.

Transmitter Audio Tailoring
The microphone amplifier circuit incorporates a tunable audio network which can be adjusted by the operator to tailor the transmitter response to his individual voice characteristic before the signal is applied to the superb internal RF speech processor.

New Standard of Purity
Three 6146B final tubes in a specially configured circuit provide a freedom from IMD products and an overall purity of emission unattainable in two-tube and transistor designs, while a new DC fan motor gives whisper-quiet cooling as a standard feature.

FV-102DM Synthesized, Scanning External VFO
The FV-102DM provides the FT-102 with the advanced frequency control necessary for optimum operating convenience where seconds count. The PLL synthesizer steps at a 10 Hz rate, while slow or fast scanning can be controlled either from the push buttons on the front panel or directly from the microphone connected to the FT-102 (when a scanning microphone is used). Up to twelve frequencies can be memorized by the FV-102DM, entered from the FT-102, FV-102DM VFO or from the front panel numerical keyboard. Additional front panel controls include plus-and-minus 5 kHz and plus-and-minus 20 kHz stepping buttons; VFO dial lock, last digit blanking, and transmit/receive Main/VFO/ memory selector buttons to allow any combination of frequency controls. The VFO dial can also be activated as a clarifier for a selected memory, while the five digit fluorescent display shows the operating frequency with resolution to 10 Hz, if desired.

FC-102 Antenna Coupler
The FC-102 is a newly designed antenna tuner. With a power handling capability of 1.2 kW, the bandswitched L-C pi-network will match a wide variety of antennas (including a single wire) to your transceiver or linear amplifier on all HF bands. New design features include an in-line wattmeter with three ranges (20, 200 and 1200 watts full scale), and a "peak hold" system that enables the operator to observe peak power. A separate SWR meter is also built in for antenna tuning indication. The FC-102 includes internal relays to provide low-loss push button selection of two different antennas (and two transmitters), while the optional FAS-1-4R Remote Antenna Selector may be mounted either inside the FC-102 or right on your tower, to allow selection of four additional antennas. When remotely installed, the FAS-1-4-R is connected by a control line to the FC-102, eliminating the need for costly multiple feedlines.

SP-102 External Speaker/Audio Filter
The SP-102 features a large (120 mm) high-fidelity speaker with selectable low-and-high-cut audio filters allowing twelve possible response curves. Headphones may also be connected to the SP-102 to take advantage of the filtering feature.

SP-102P External Speaker/Phone Patch
The SP-102P provides a combination shaped response speaker and hybrid phone patch for simple interfacing. Gain controls and an audio level meter are included on the SP-102P.

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